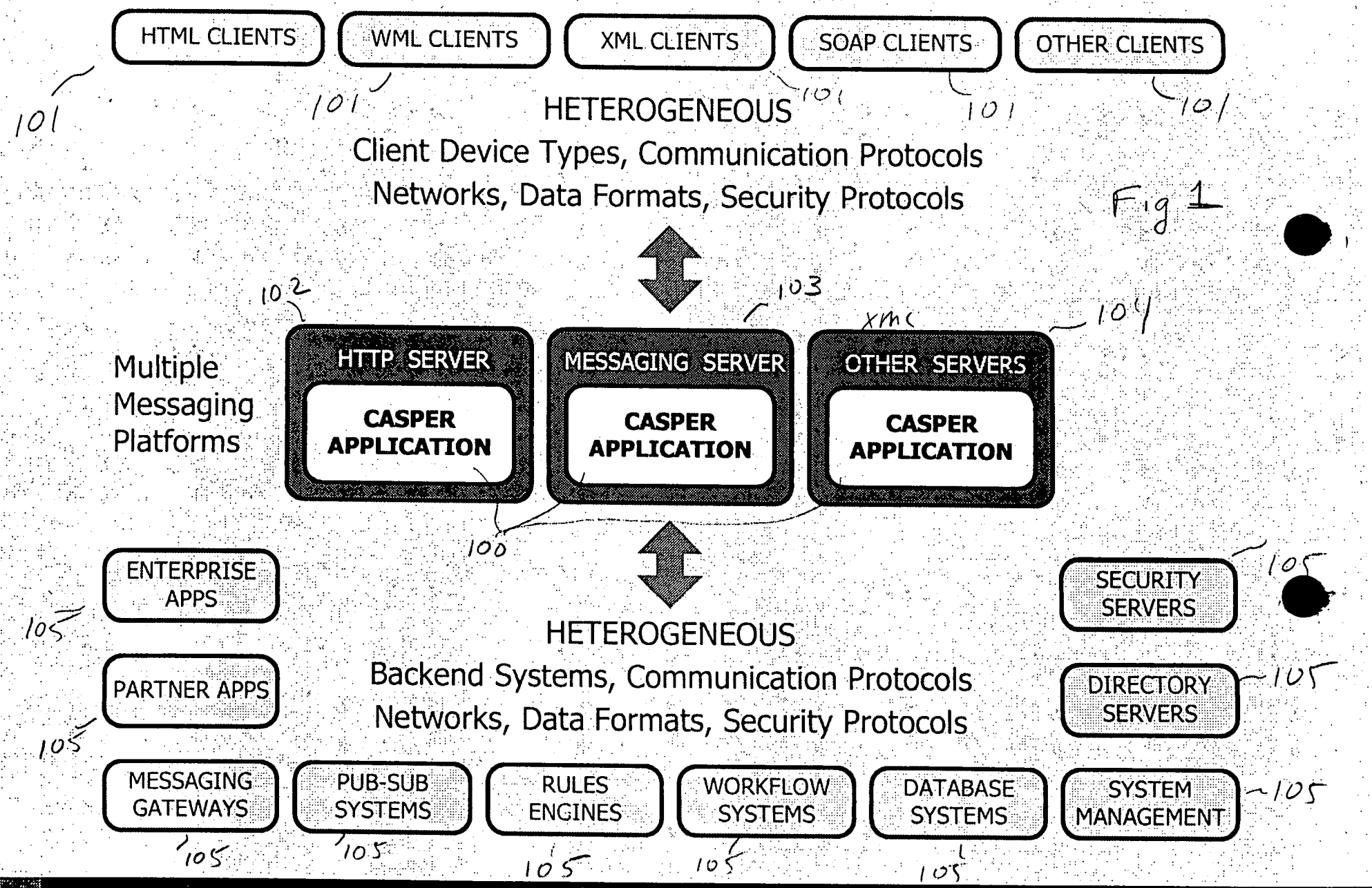
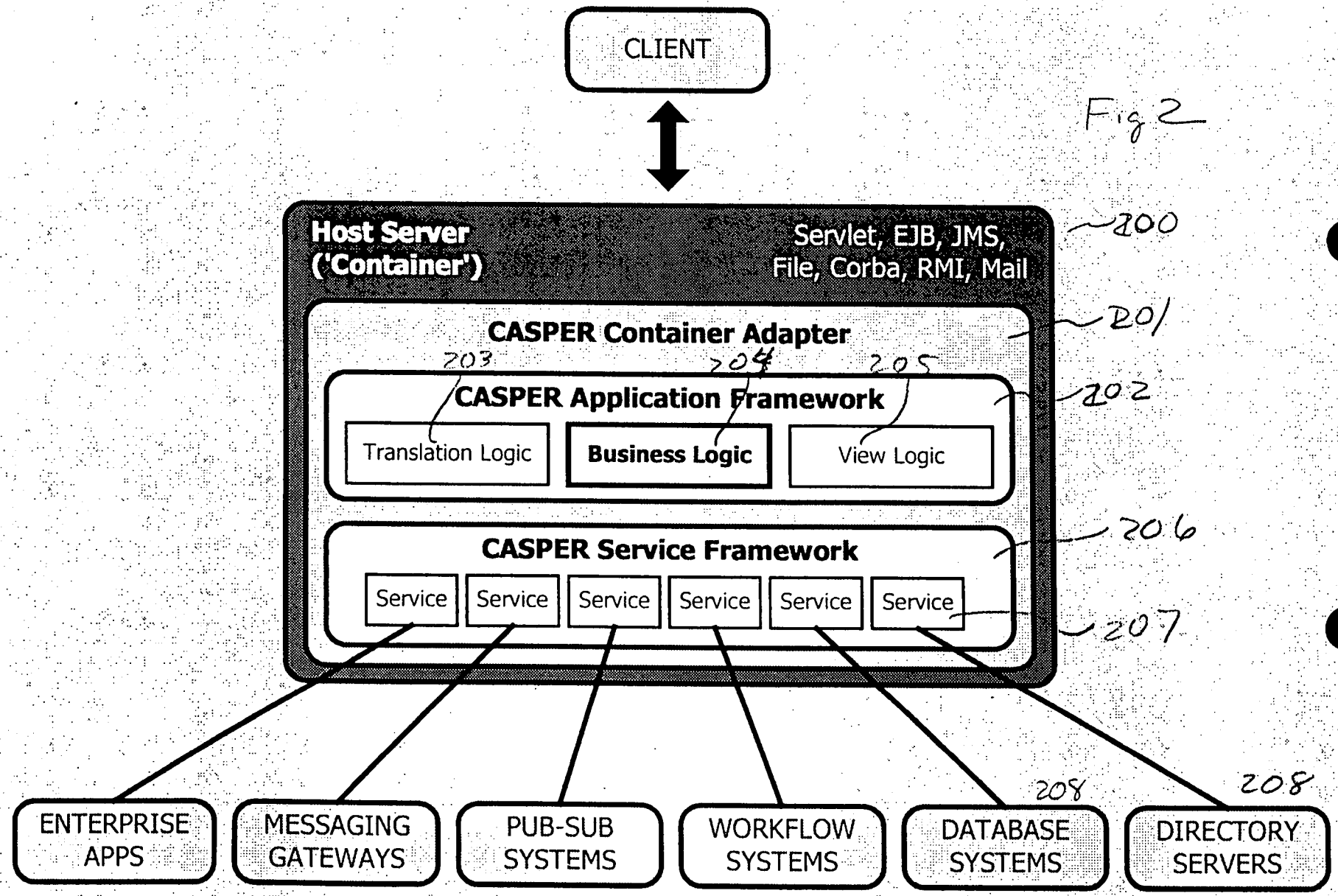
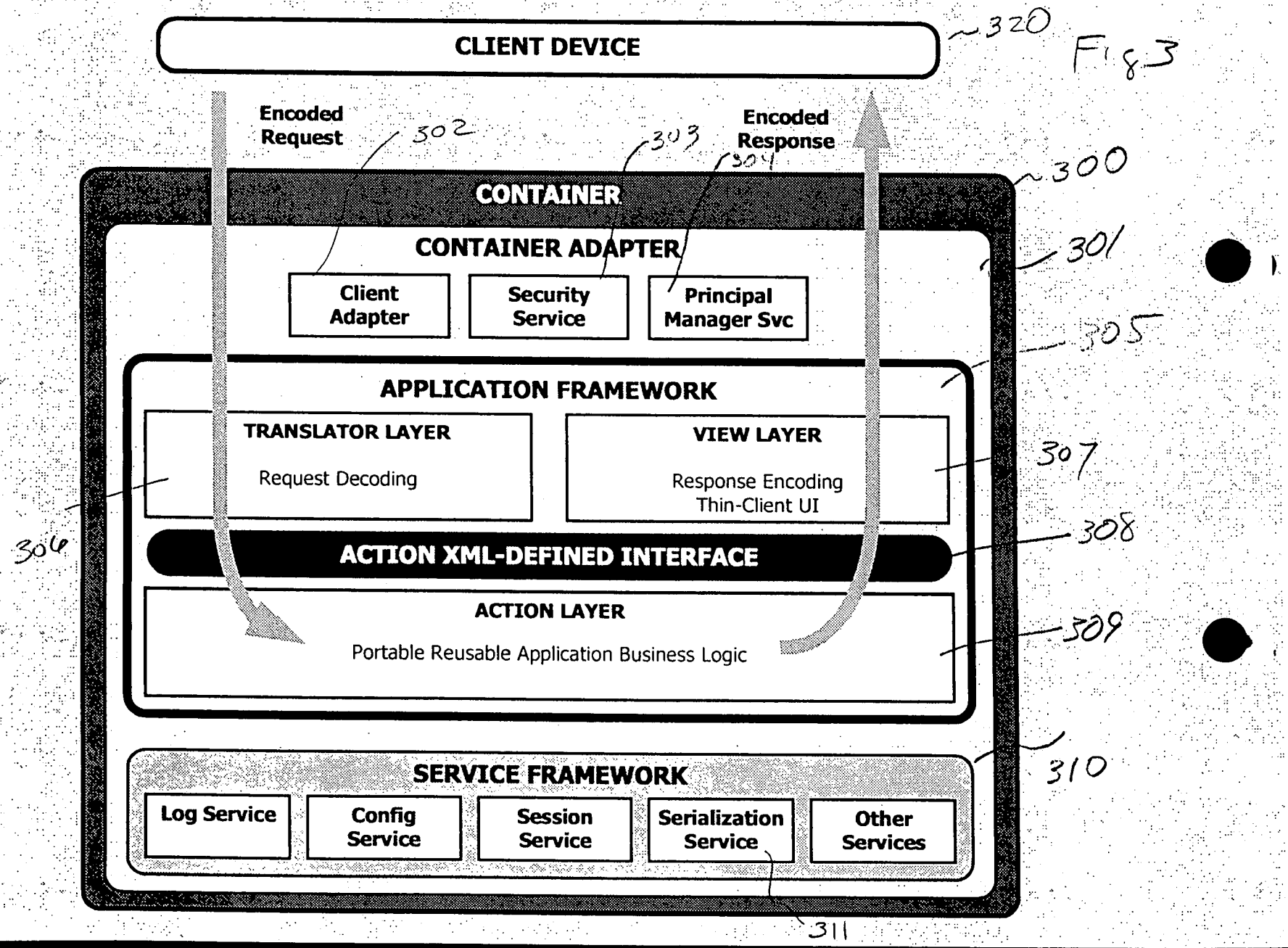
Heterogeneous Distributed Environment



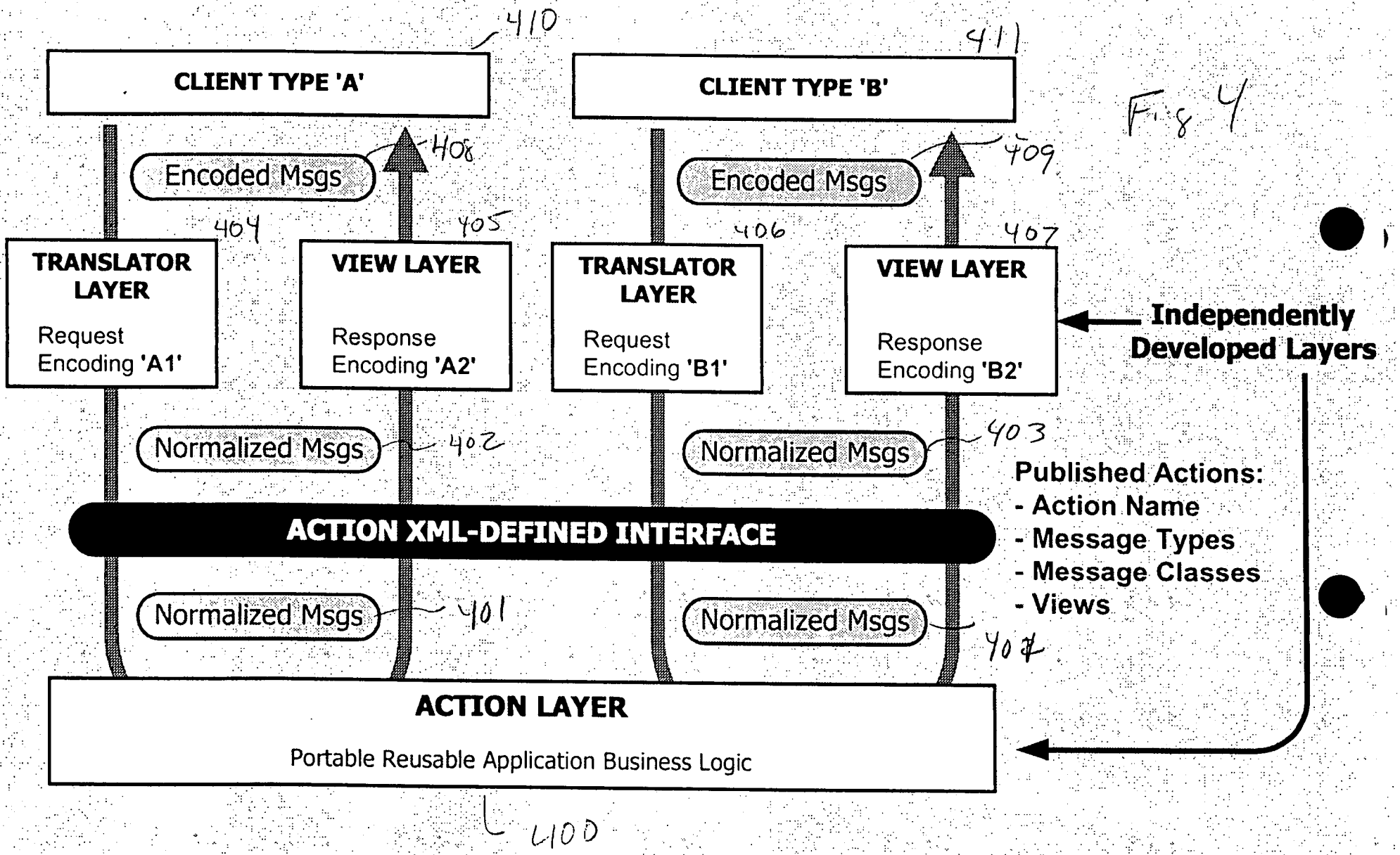
Container and Framework Overview



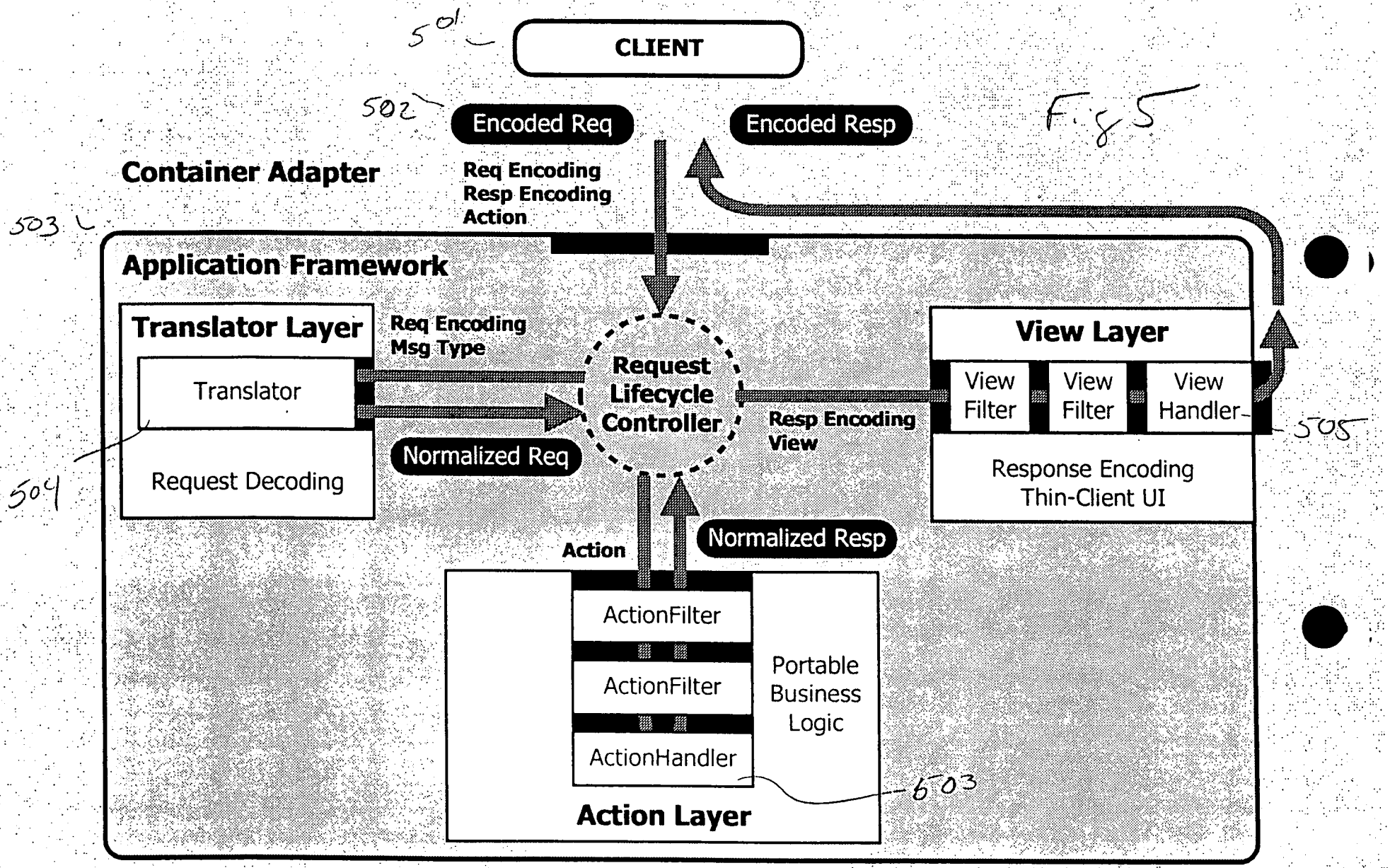
Application Framework Overview



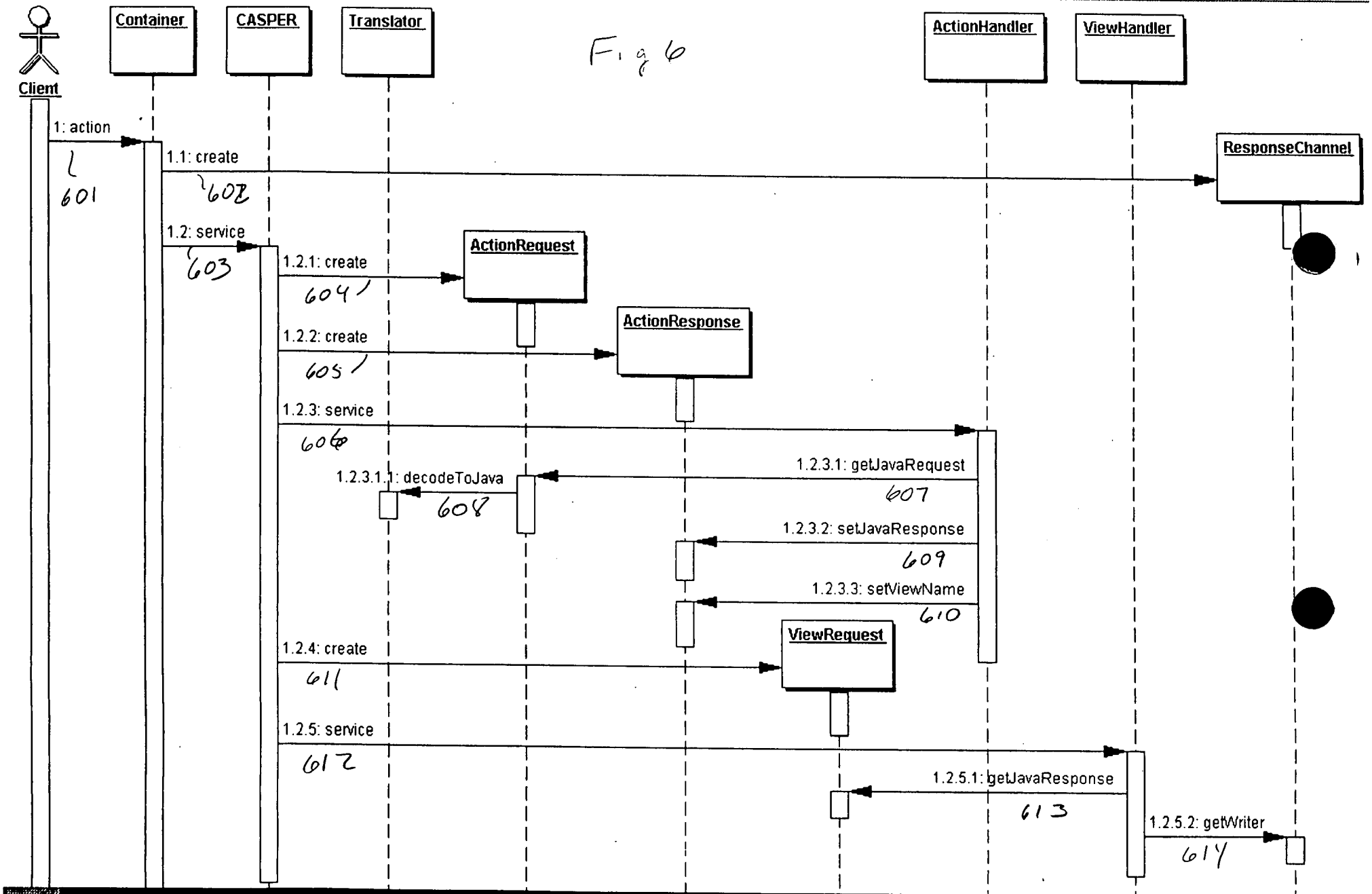
Published XML-Defined Action Interface



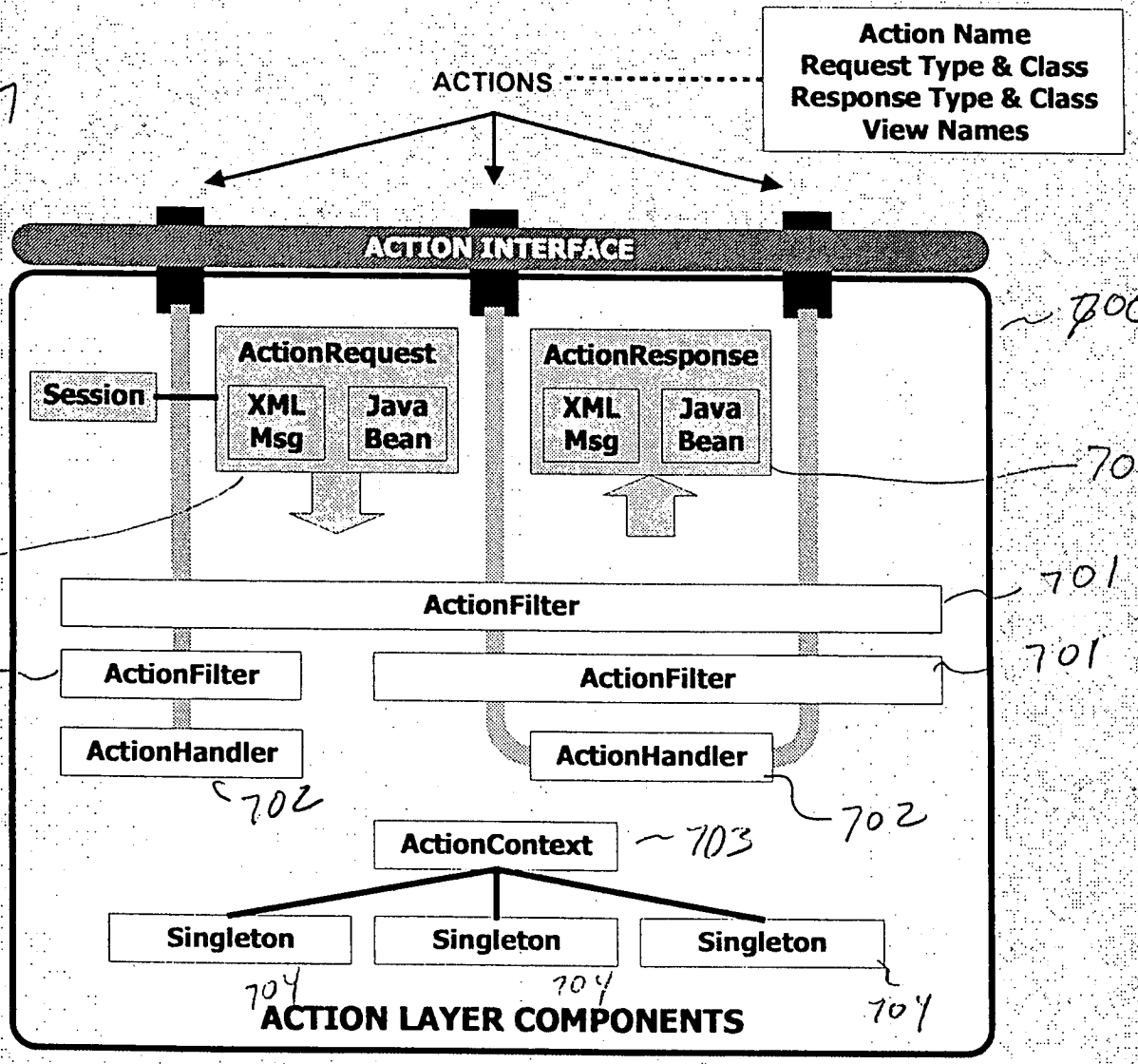
Application Request Lifecycle Overview



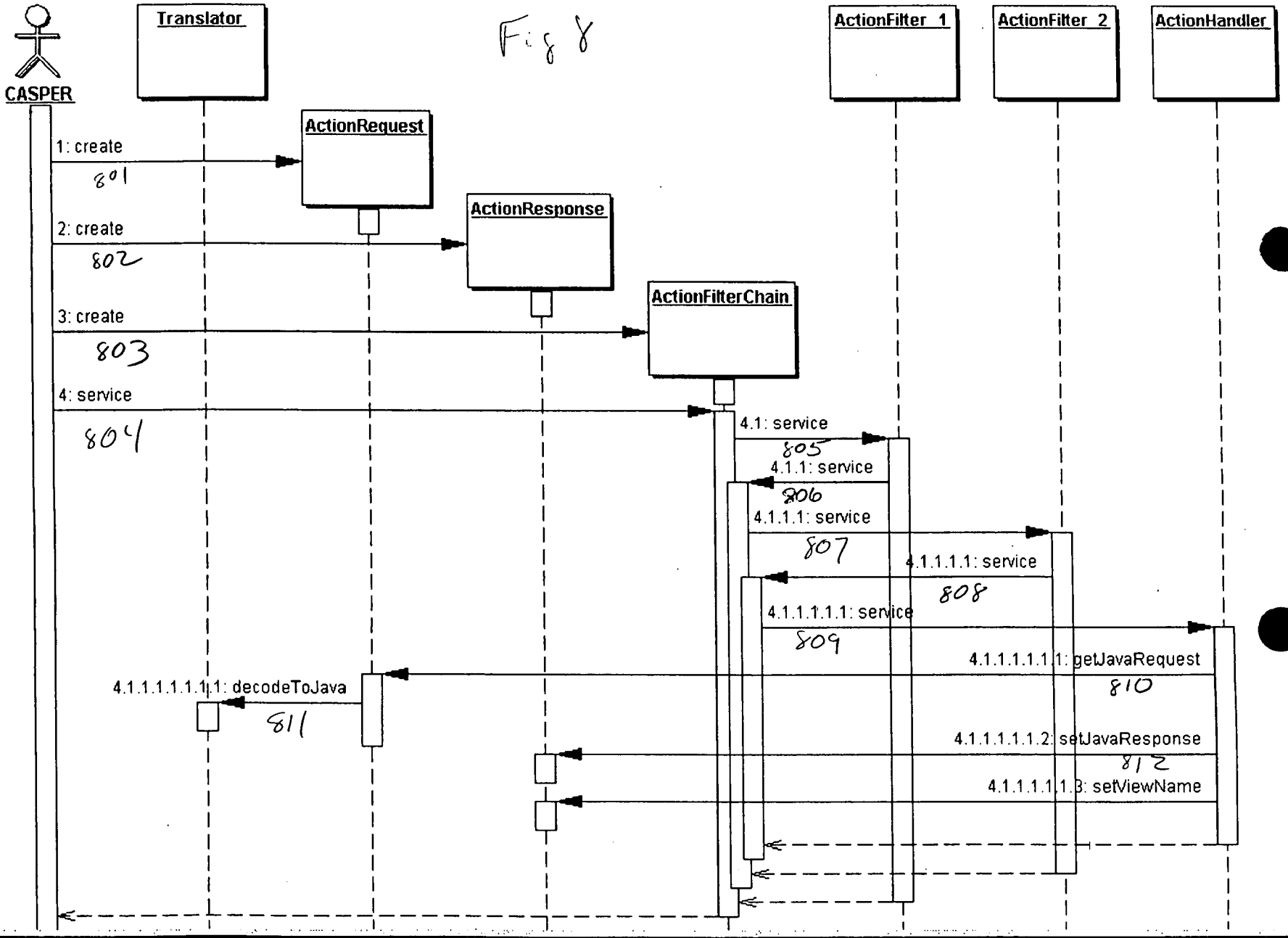
Application Request Sequence Overview



Action Layer Components



Action Layer Request Sequence Overview



Action Layer Dynamic Dispatch

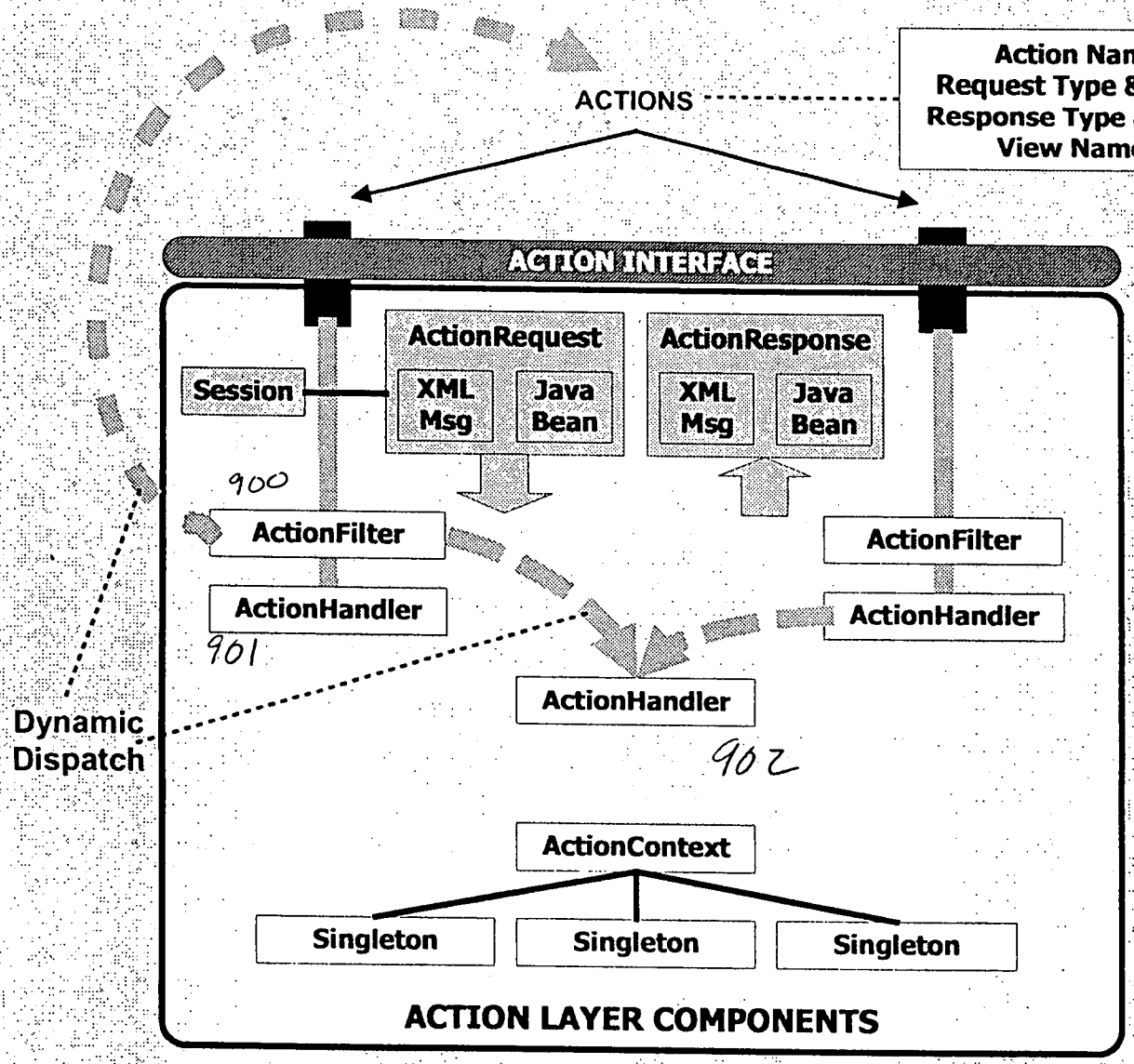
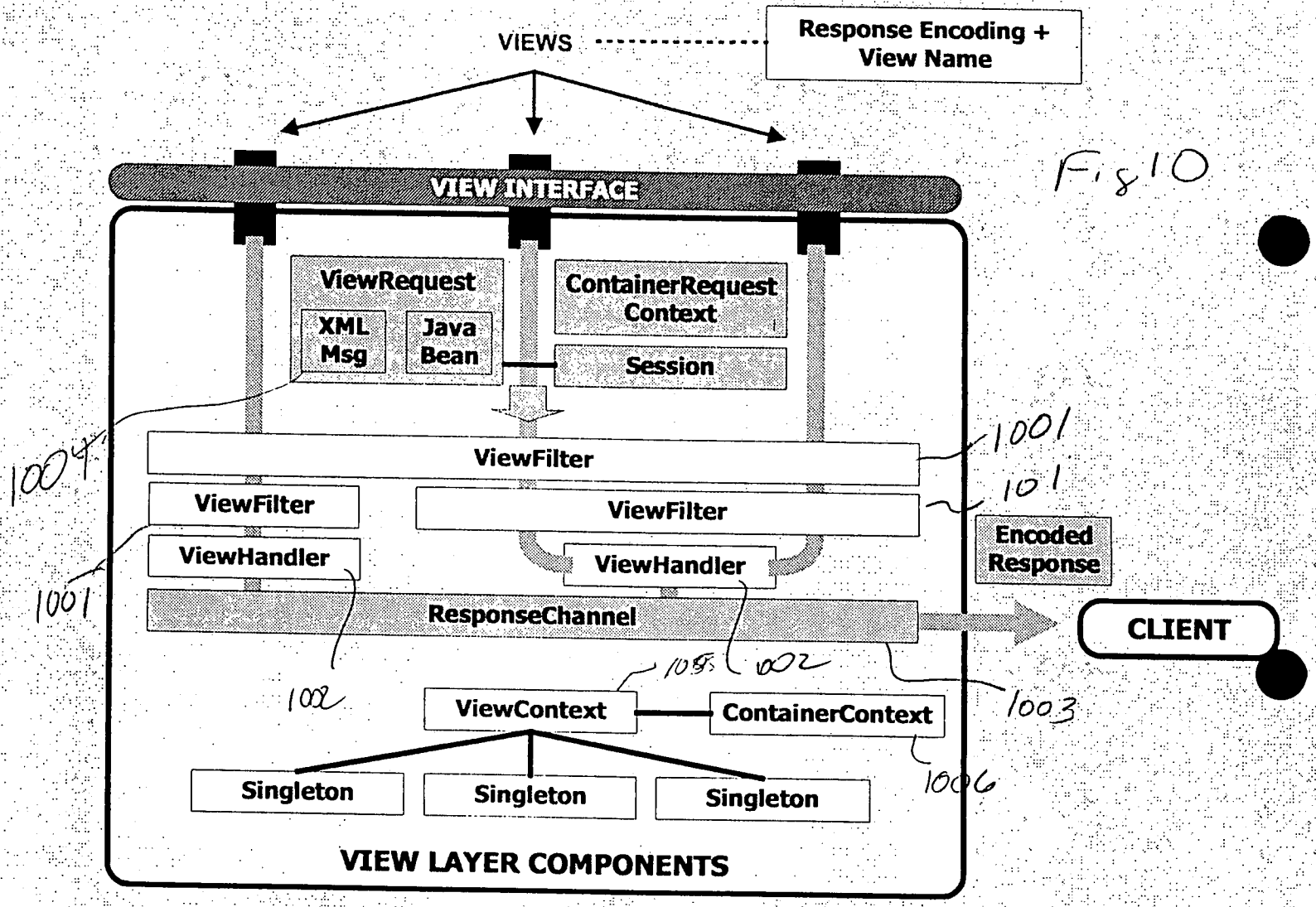
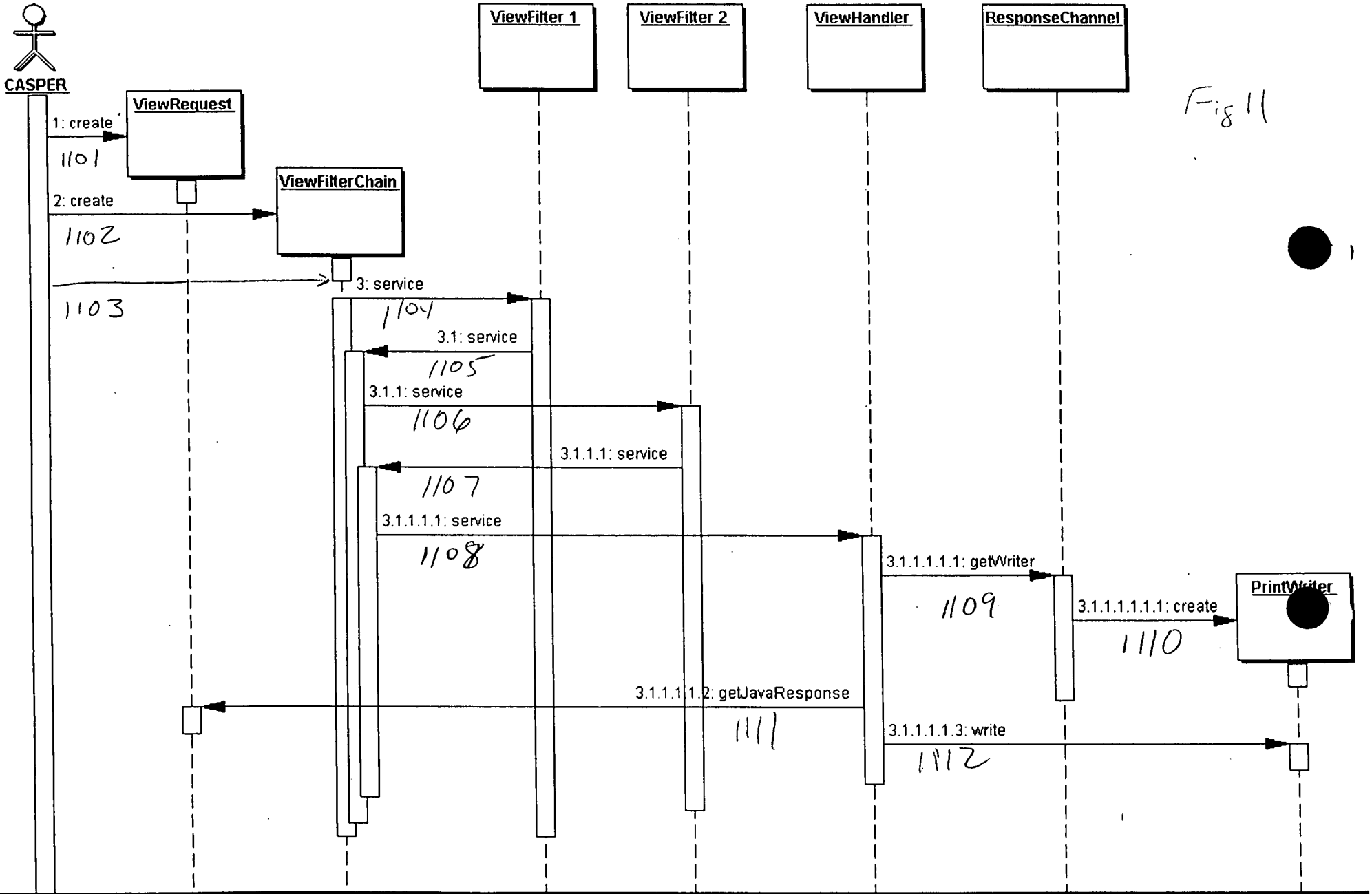


Fig 9

View Layer Components



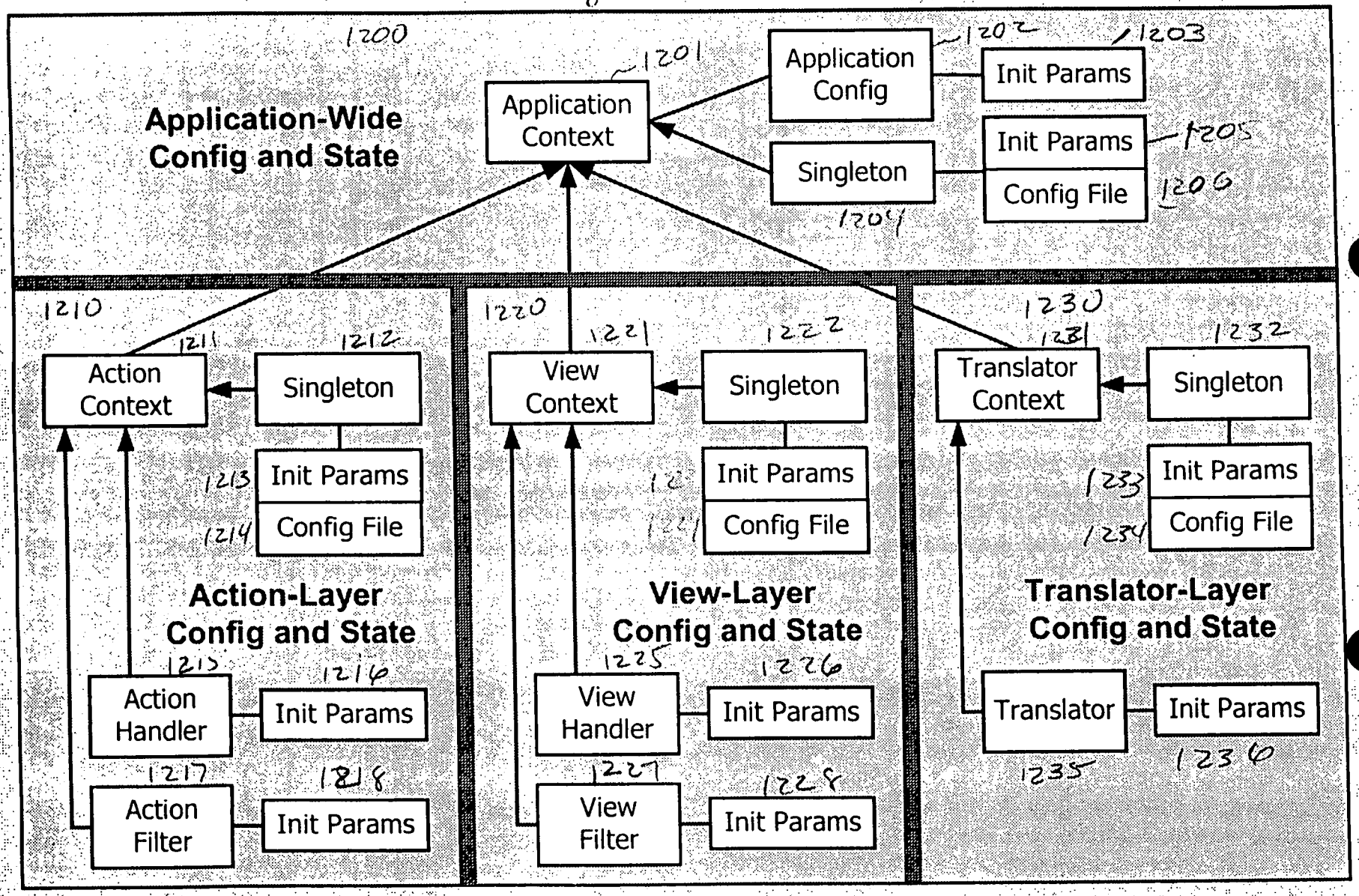
View Layer Request Sequence Overview



Configuration And State Architecture

TO20TO "66555260

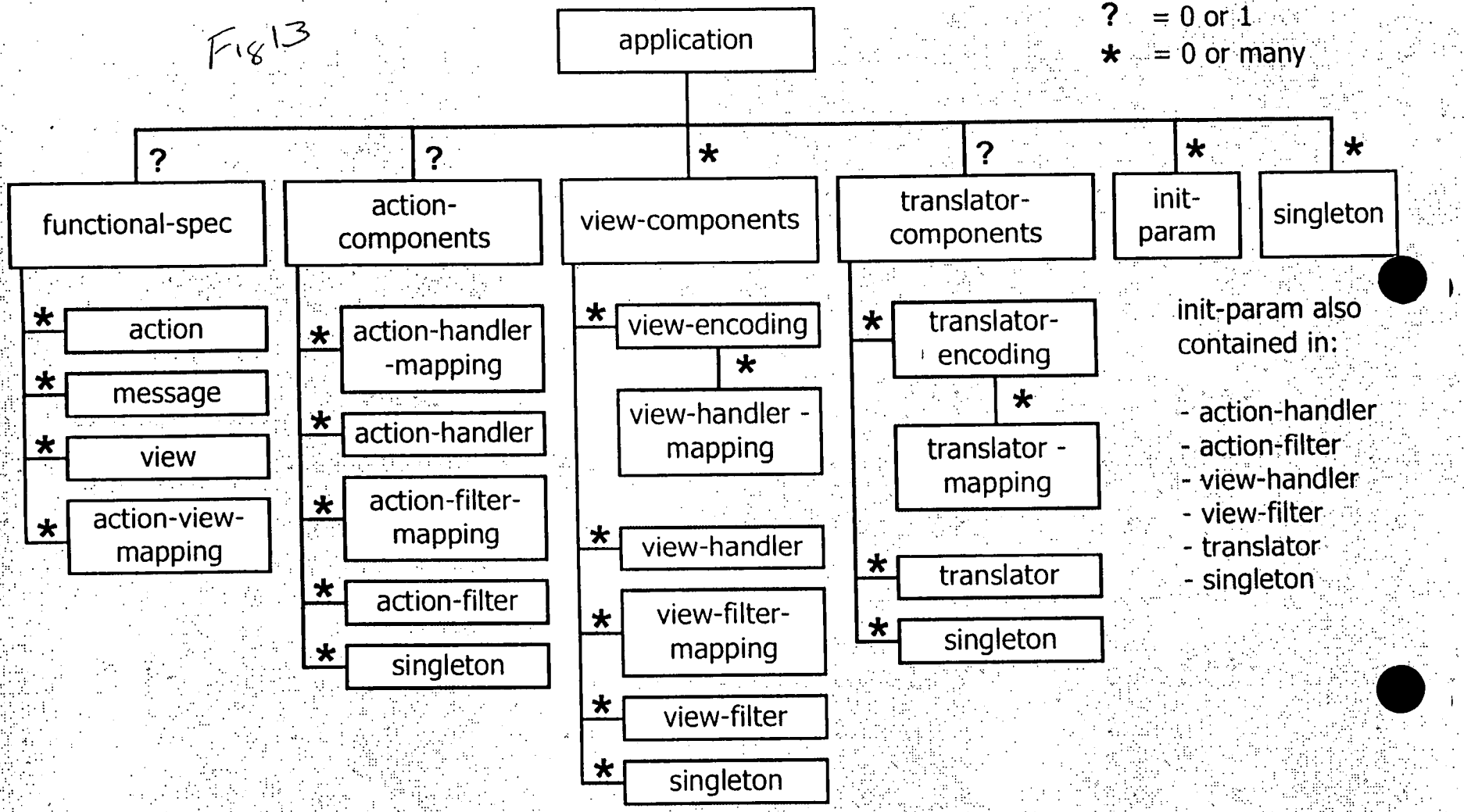
Fig 12



casper-application.xml structure

"020TO" 66955260

Fig 13




```
<!DOCTYPE application
    PUBLIC "-//GE CASPER//DTD config casper-application-1.0//EN"
    "http://casper.ge.com/dtd/config/casper-application-1.0.dtd">
```

TO2003/000260

Action Table

1401

Action	application request format	application response format	Dispatcher
getproduct	get-product-req	product-description-rsp	

1402

filter
⋮
ActionHandler

Fig 14

TO3OTO" 66555260

Translator Table 1501

client request formats	application request format	dispatch
NVpair	any	

1502

Translator i

Fig 15

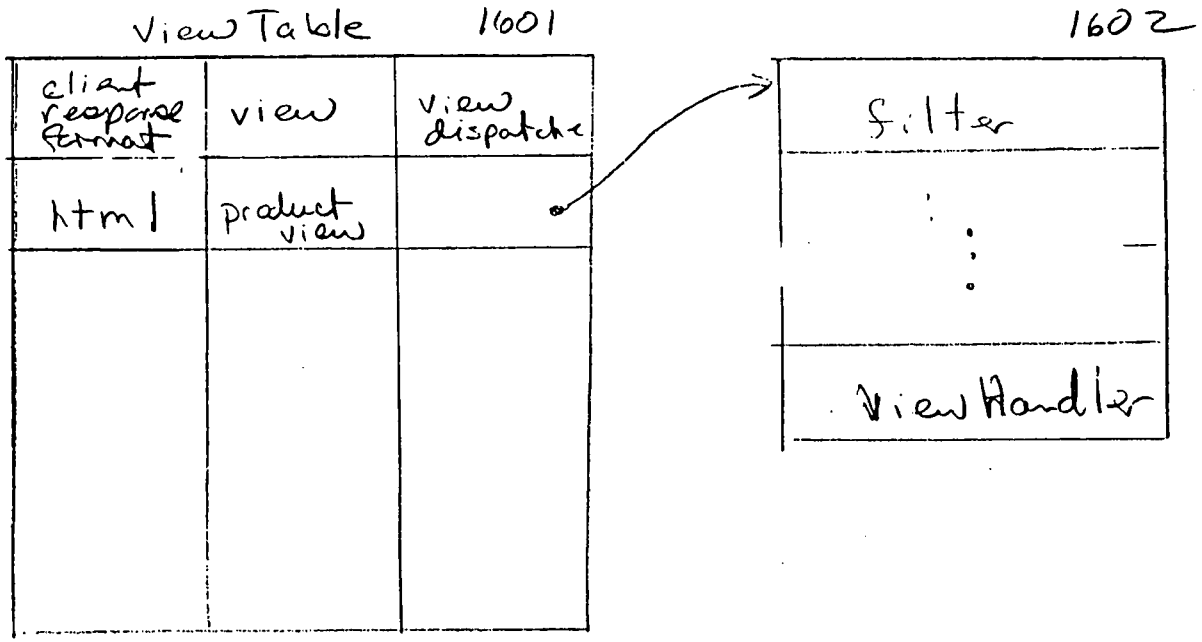

View Table
1601
1602
client response format
view
view dispatcher
html
product view
filter
ViewHandler

Fig 16

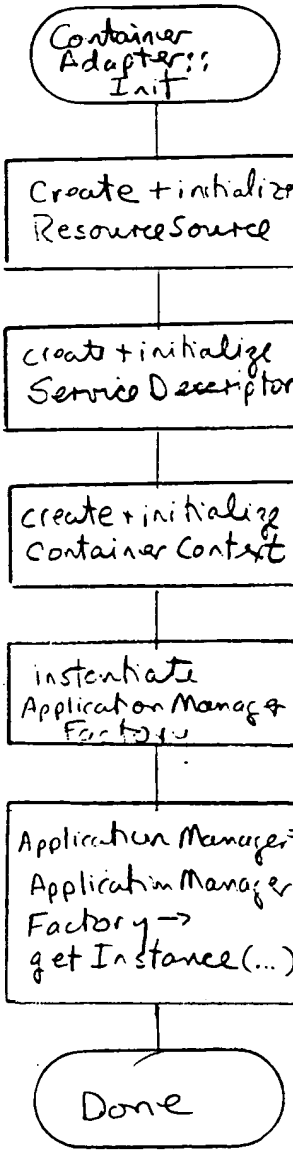
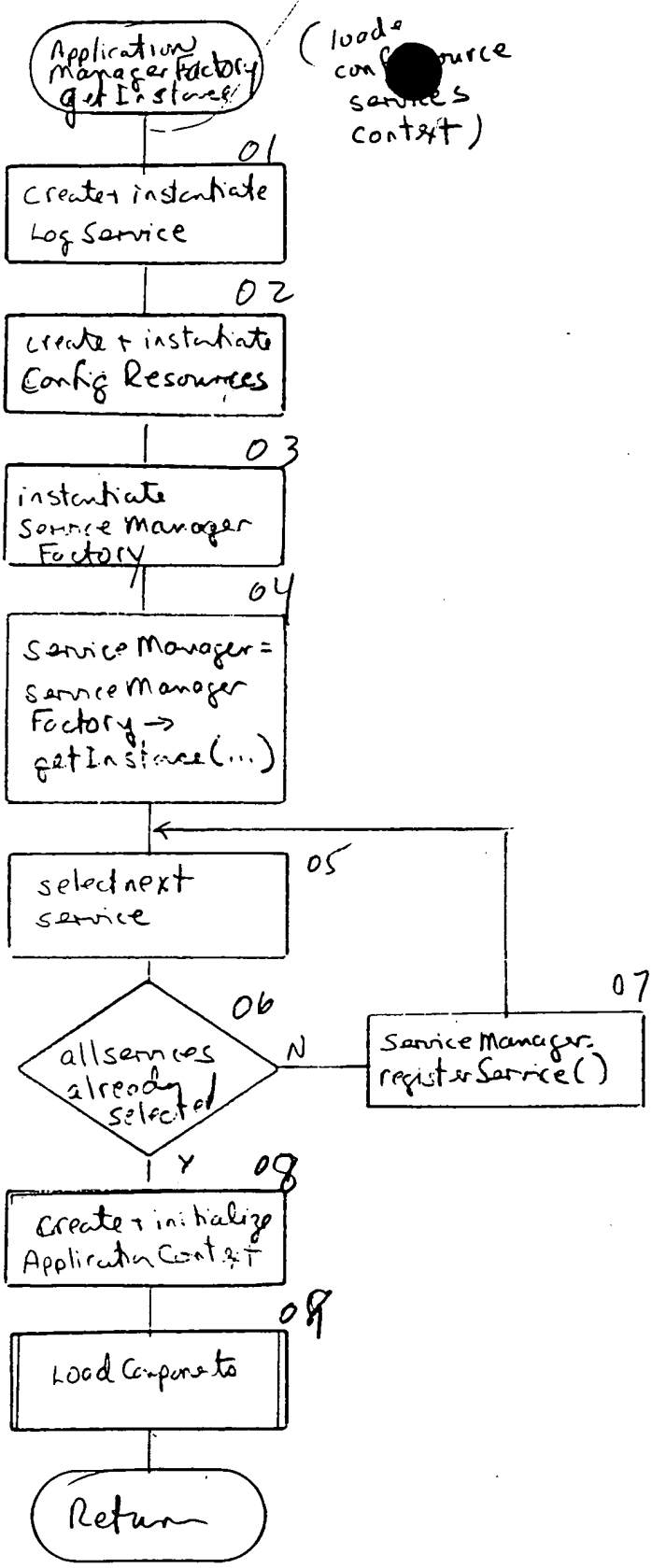


Fig 17

Docket: 50277-0202


Application Manager Factory getInstance()
(load config resource services context)
01
Create + instantiate Log Service
02
create + instantiate Config Resources
03
instantiate Service Manager Factory
04
Service Manager = Service Manager Factory → getInstance(...)
05
select next service
06
all services already selected
N
07
Service Manager. registerService()
Y
08
Create + initialize Application Context
09
Load Components
Return

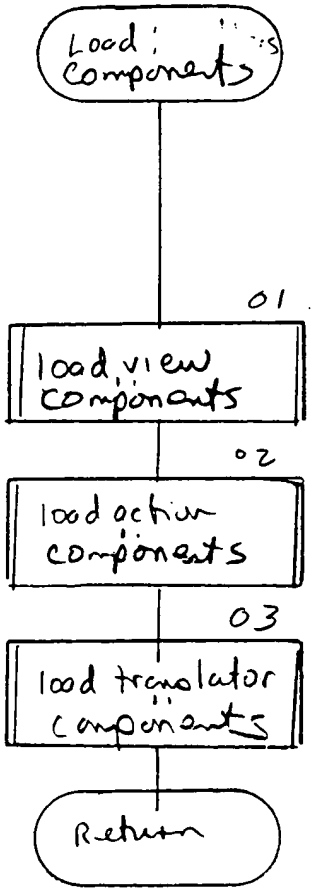


FIG. 19

09555639 - 010204

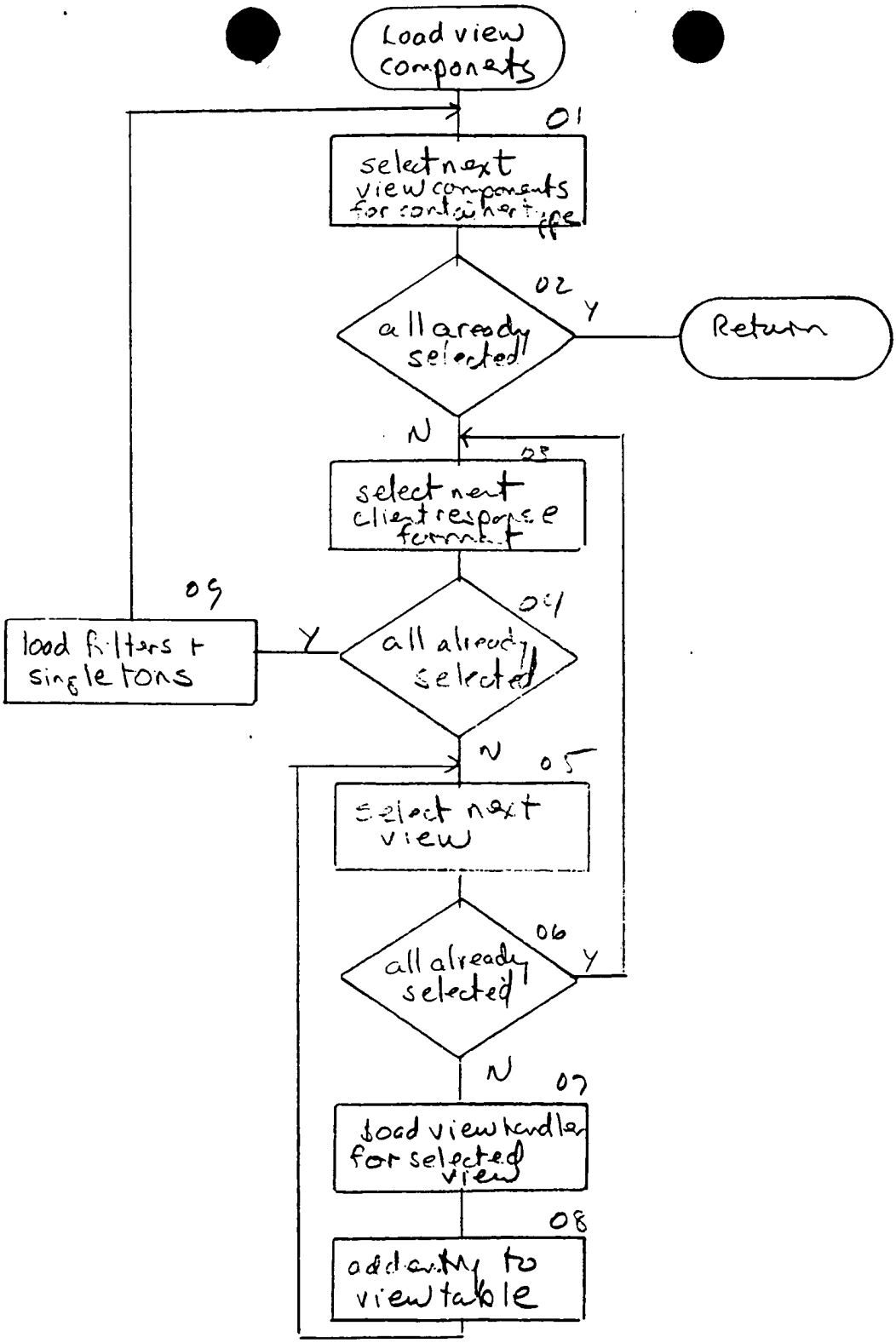


Fig. 20

09550603 - 040202

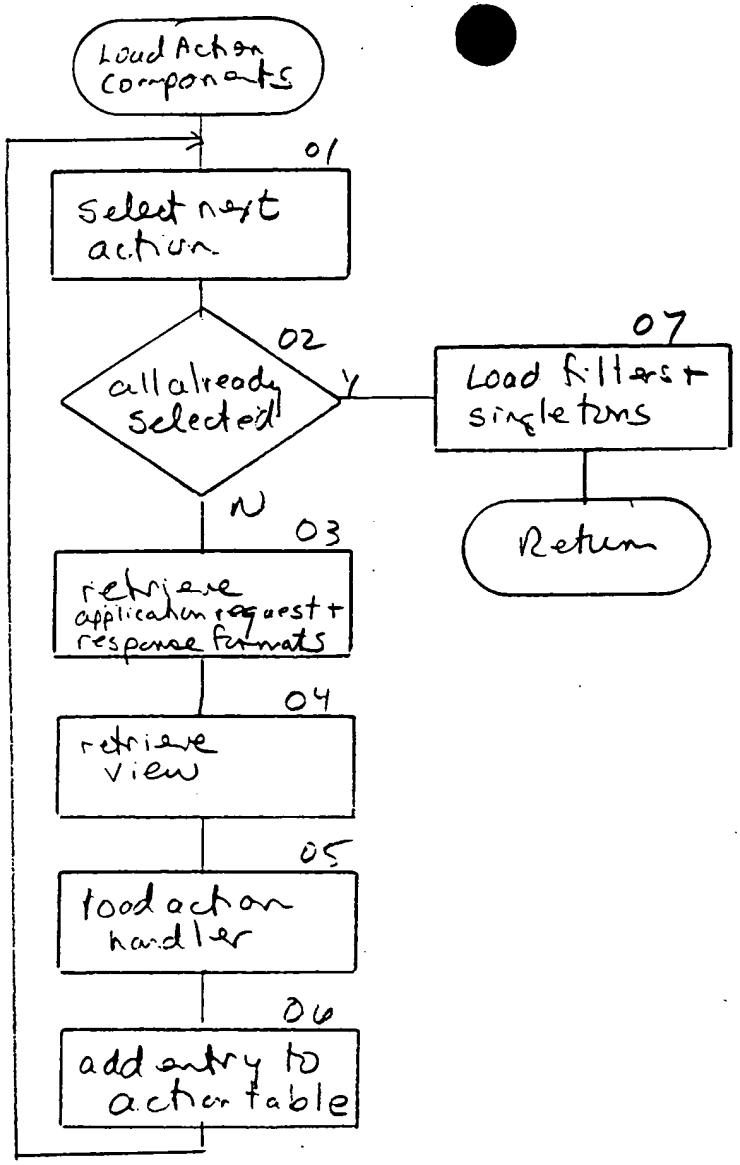


Fig. 21

09755580 - 010204

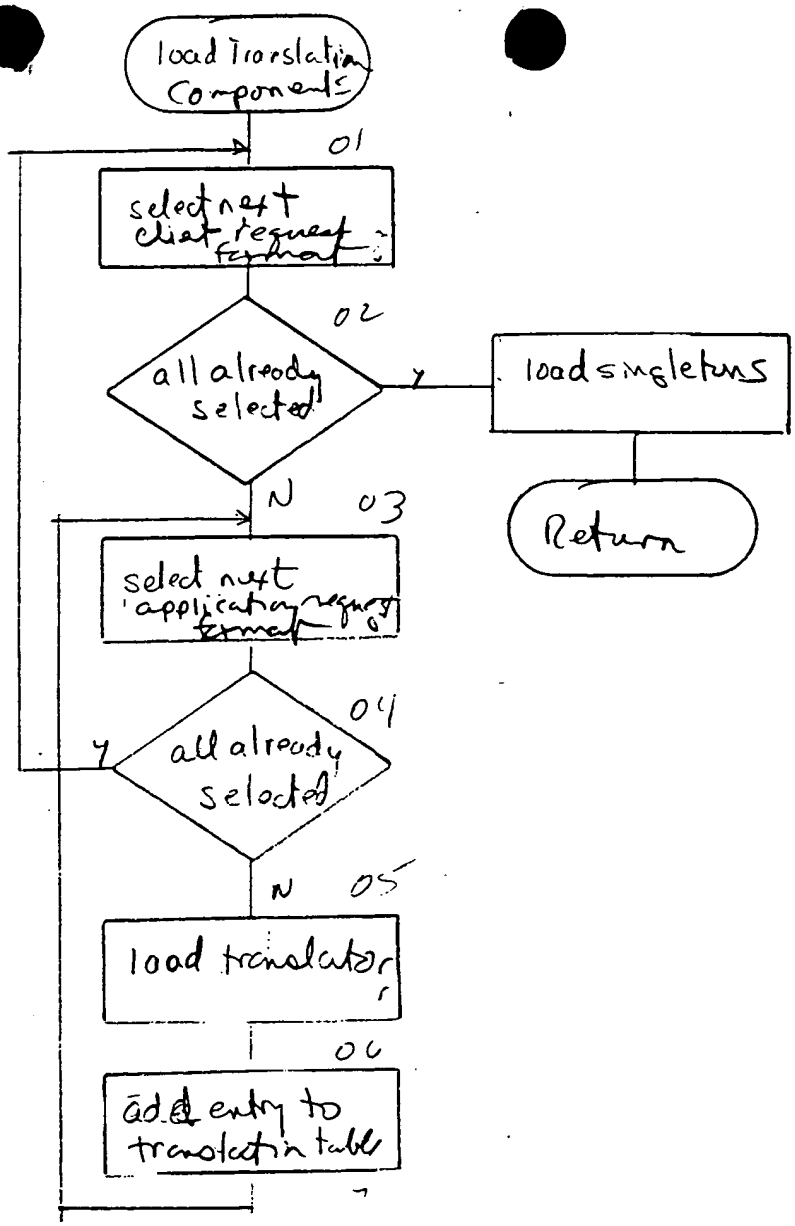

load Translation Components
01
select next client request format
02
all already selected
Y
load singletons
Return
N
03
select next application request format
04
all already selected
Y
N
05
load translator
06
add entry to translation table

Fig 22

PATENT - 08/25/98

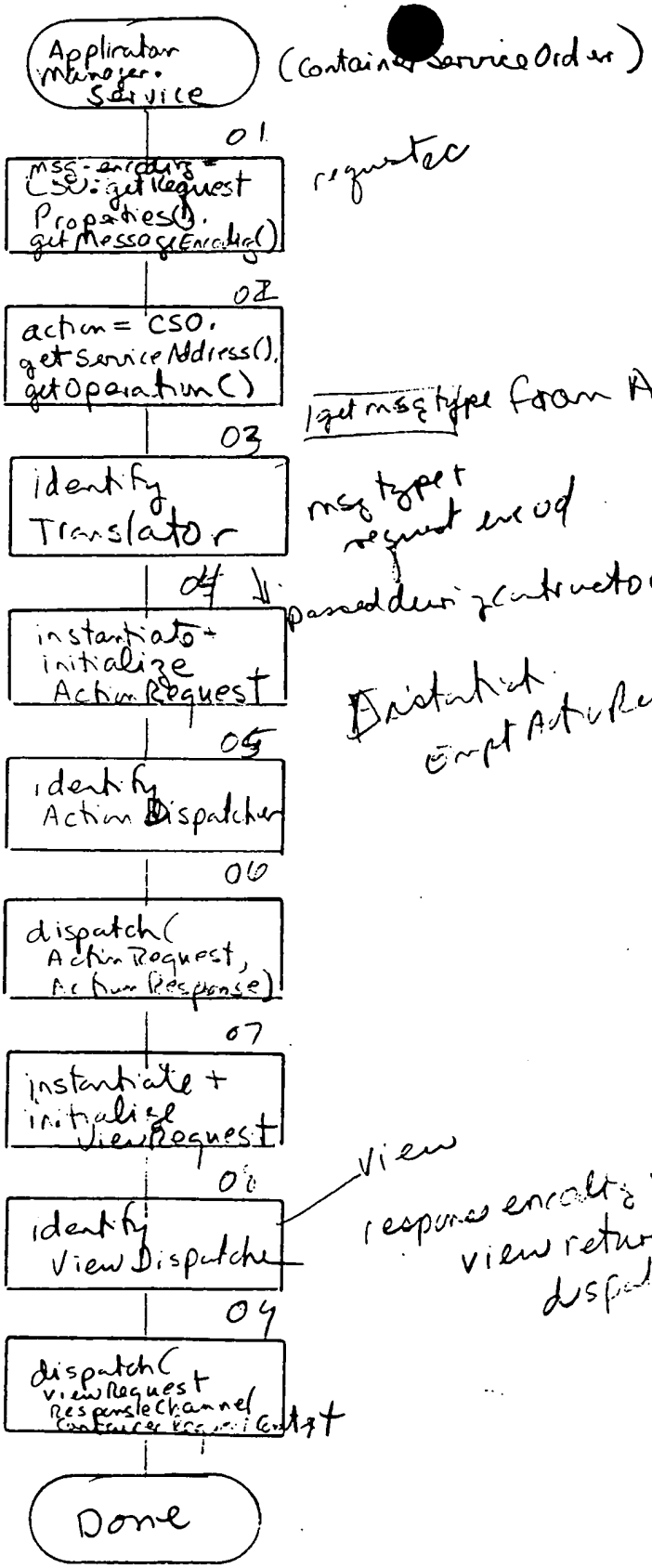


Fig. 23

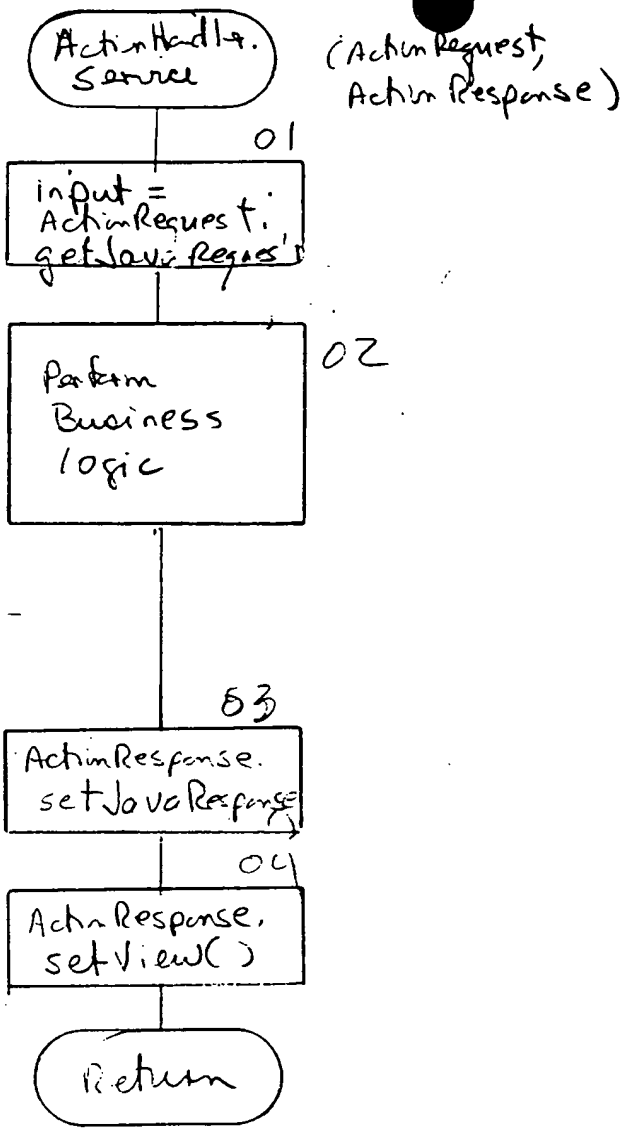


Fig. 24

09555536 - 070202

Service Framework Overview

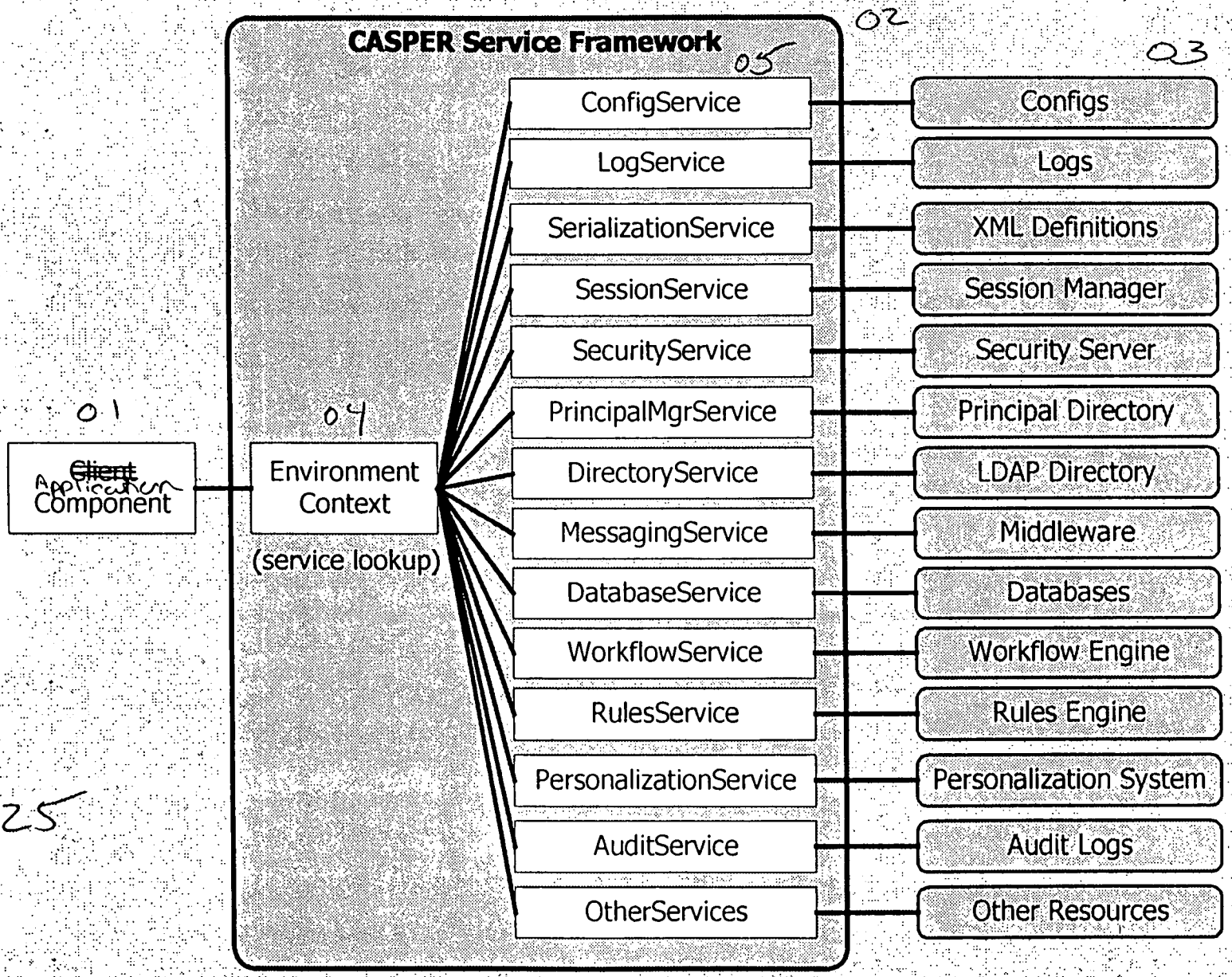


Fig 25

Service Classes & Interfaces

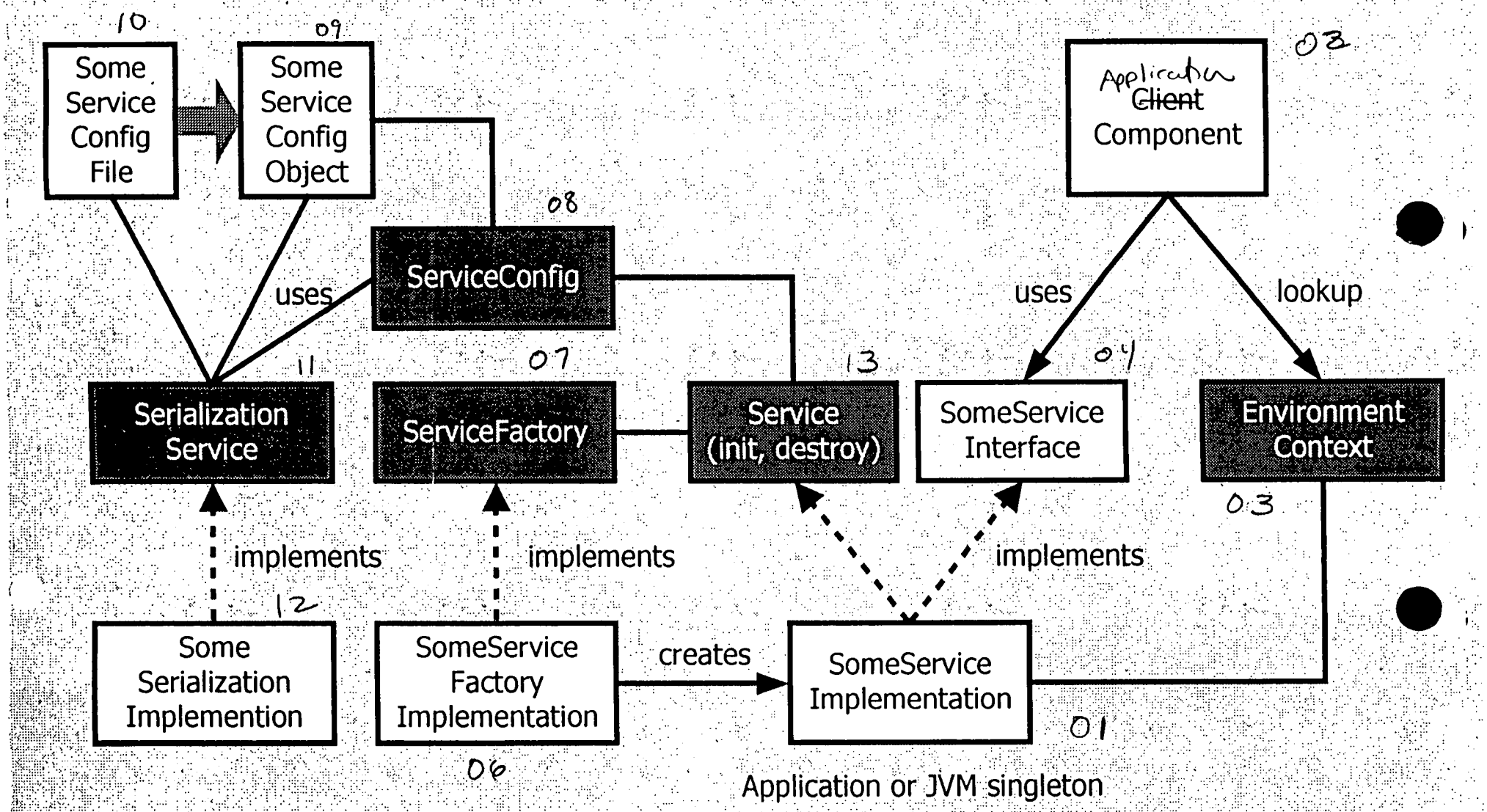


Fig 26

Service Framework Configuration

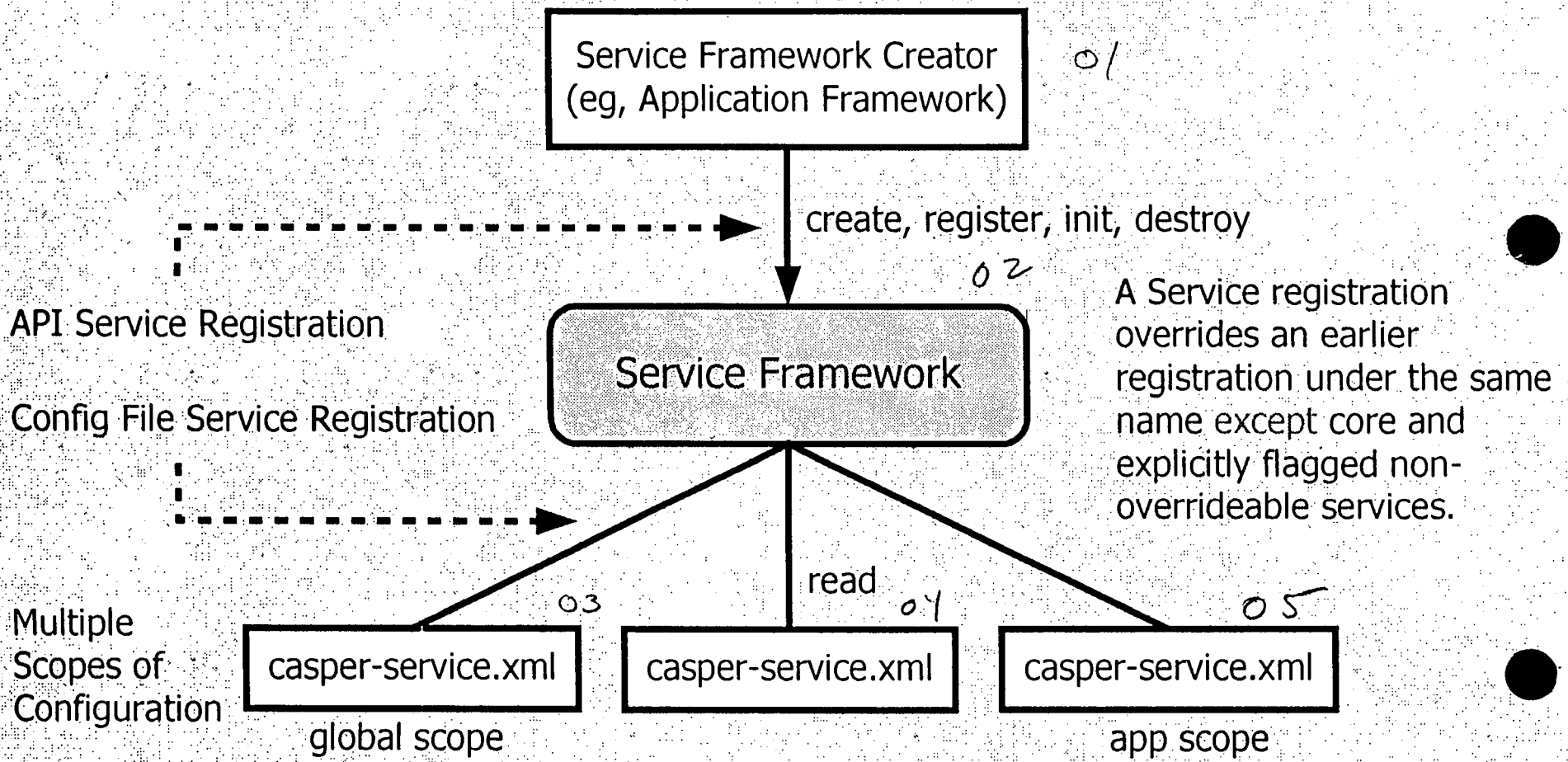


Fig 27

TO20TO"66595260

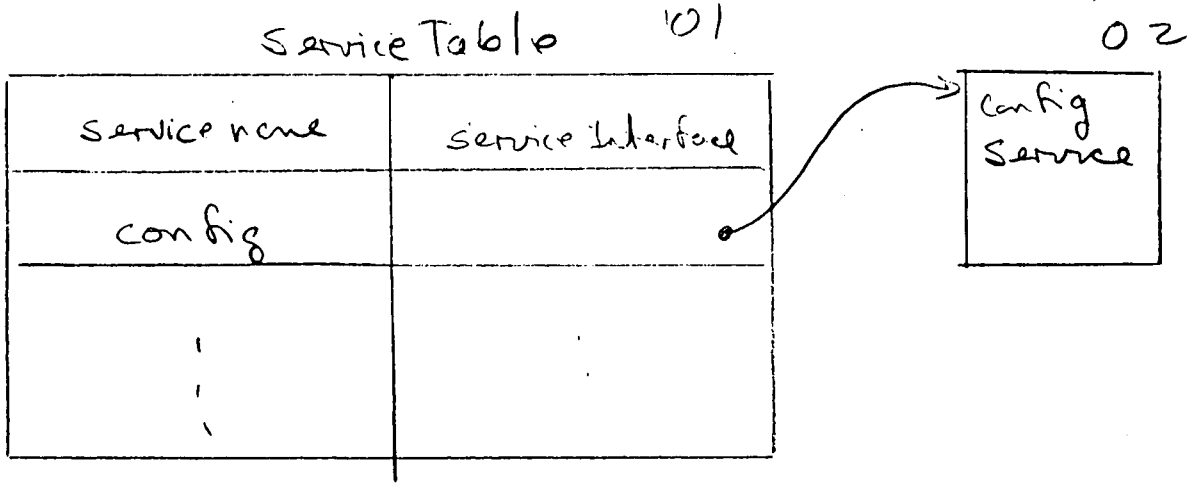


Fig 28

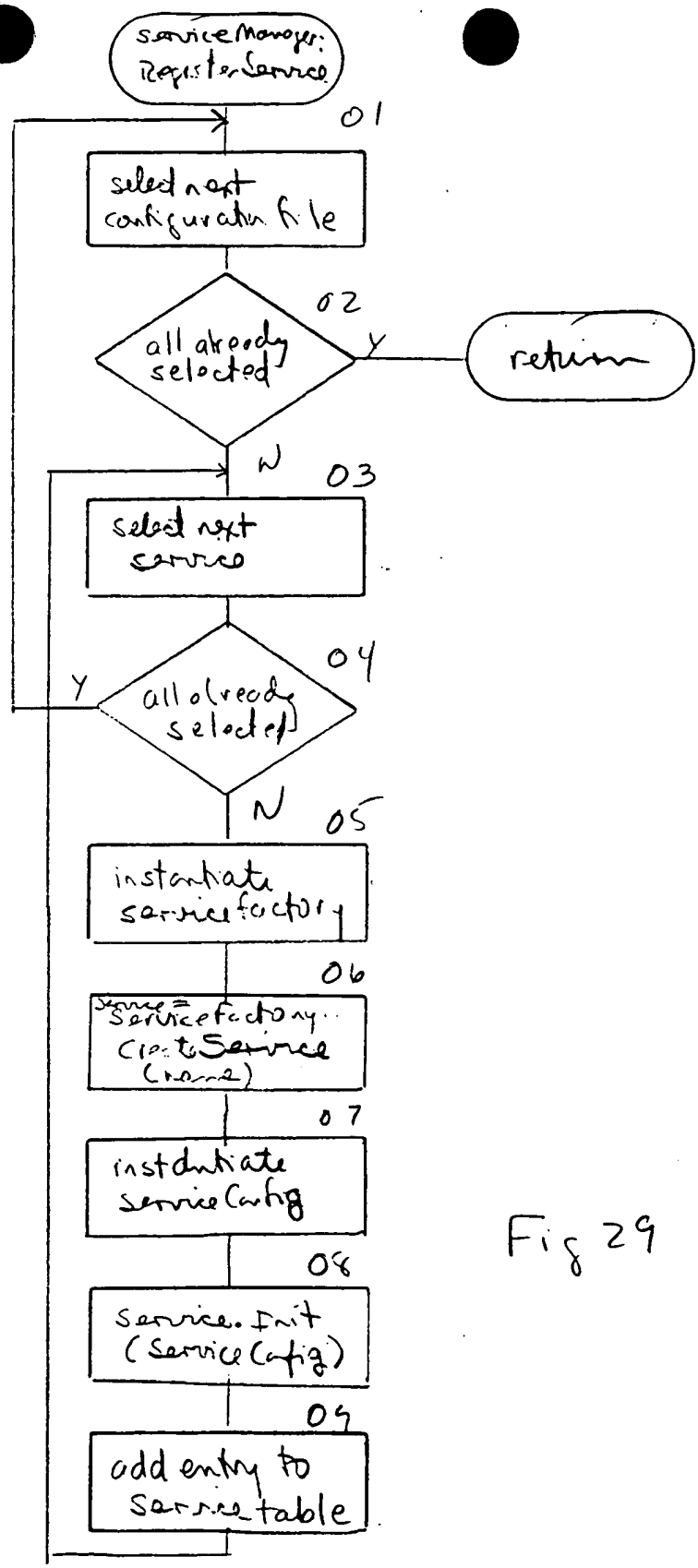


Fig 29

Sony Ex. 1009 - Page 1 of 2

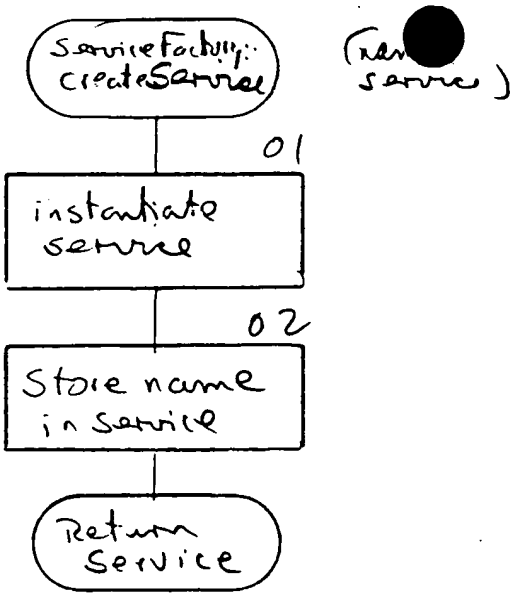


Fig 30

EP 0 750 256 A2

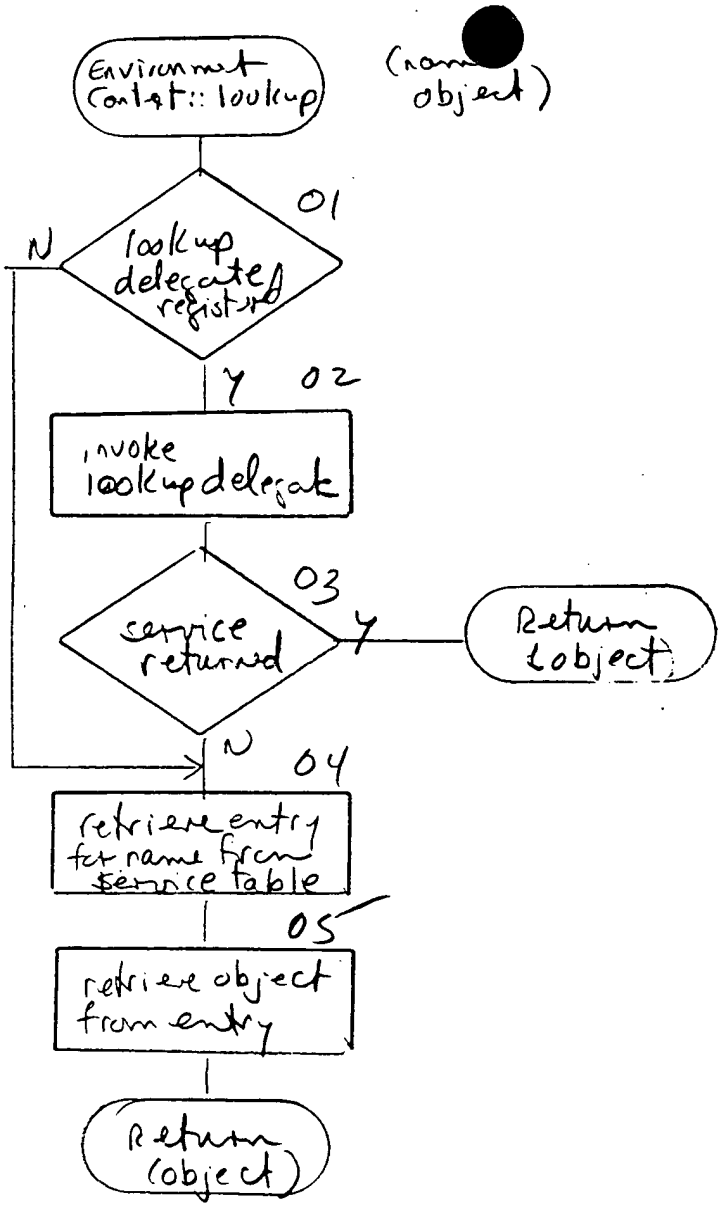
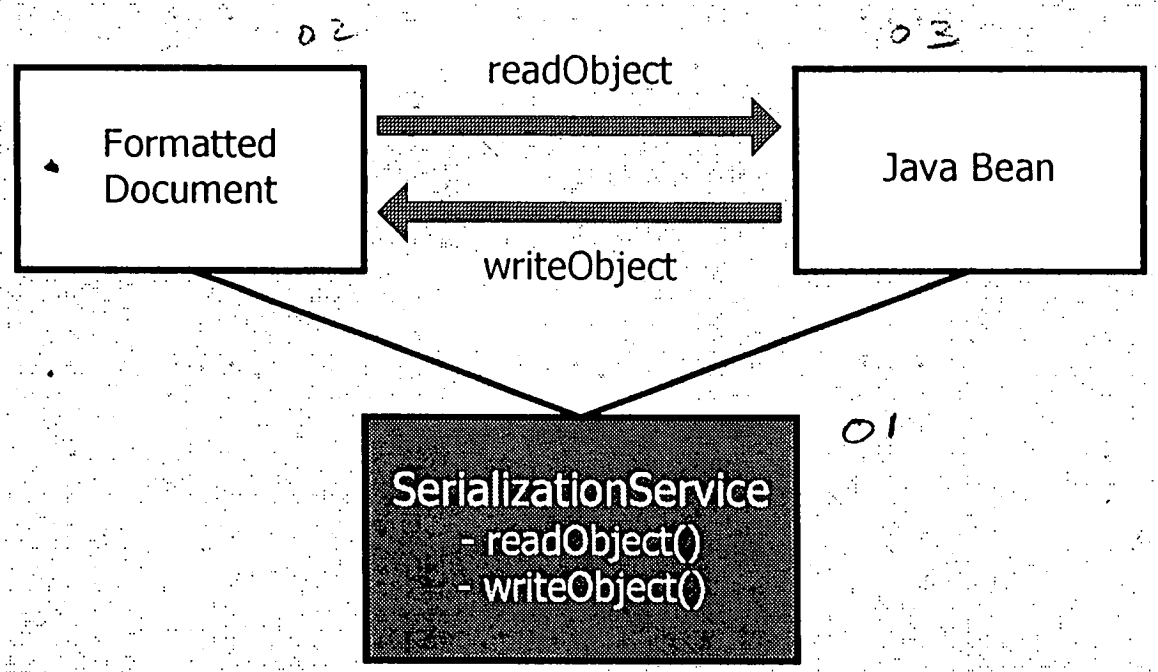


Fig 31

0705530-040204

Serialization Service



A SerializationService is responsible for transforming and validating formatted documents to and from JavaBean objects

FIG. 32

Configuration Definition with SFO XML Tools

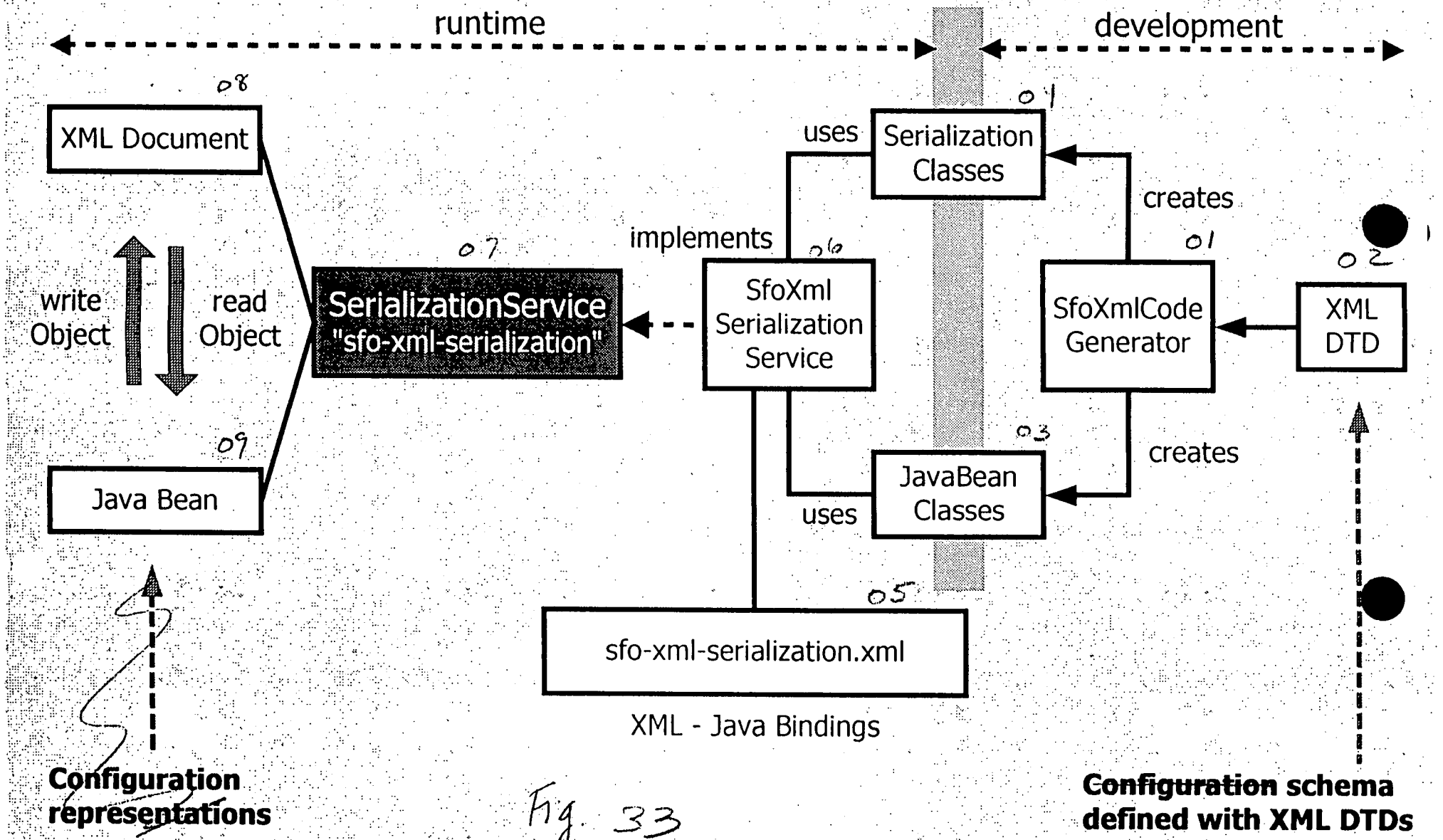


Fig. 33

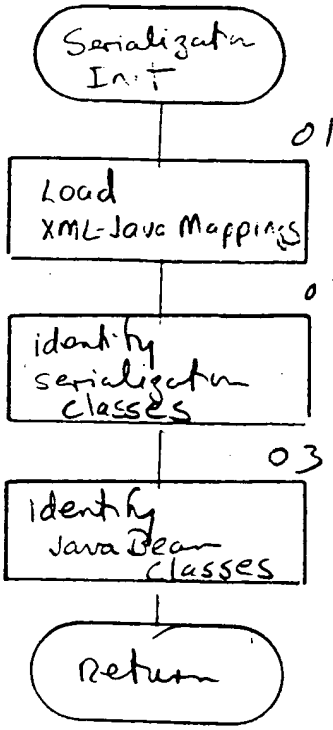


Fig. 34

09555598 - 031201

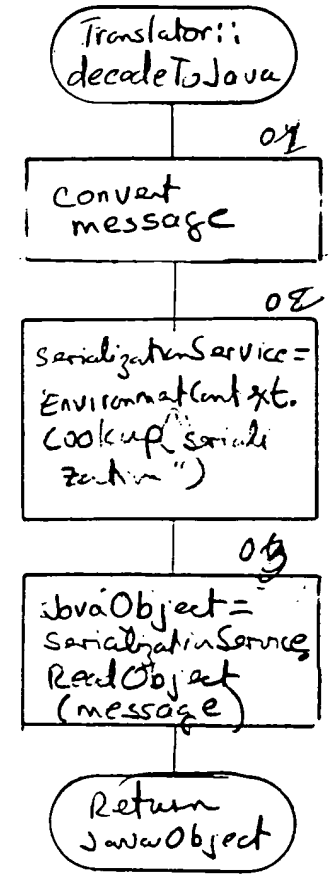

Translator::
decodeToJava
(client format
message
application format)
01
Convert
message
02
SerializationService=
EnvironmentContext.
Lookup("Serialization")
03
javaObject=
SerializationService.
ReadObject
(message)
Return
JavaObject

Fig. 35

05555505.042001

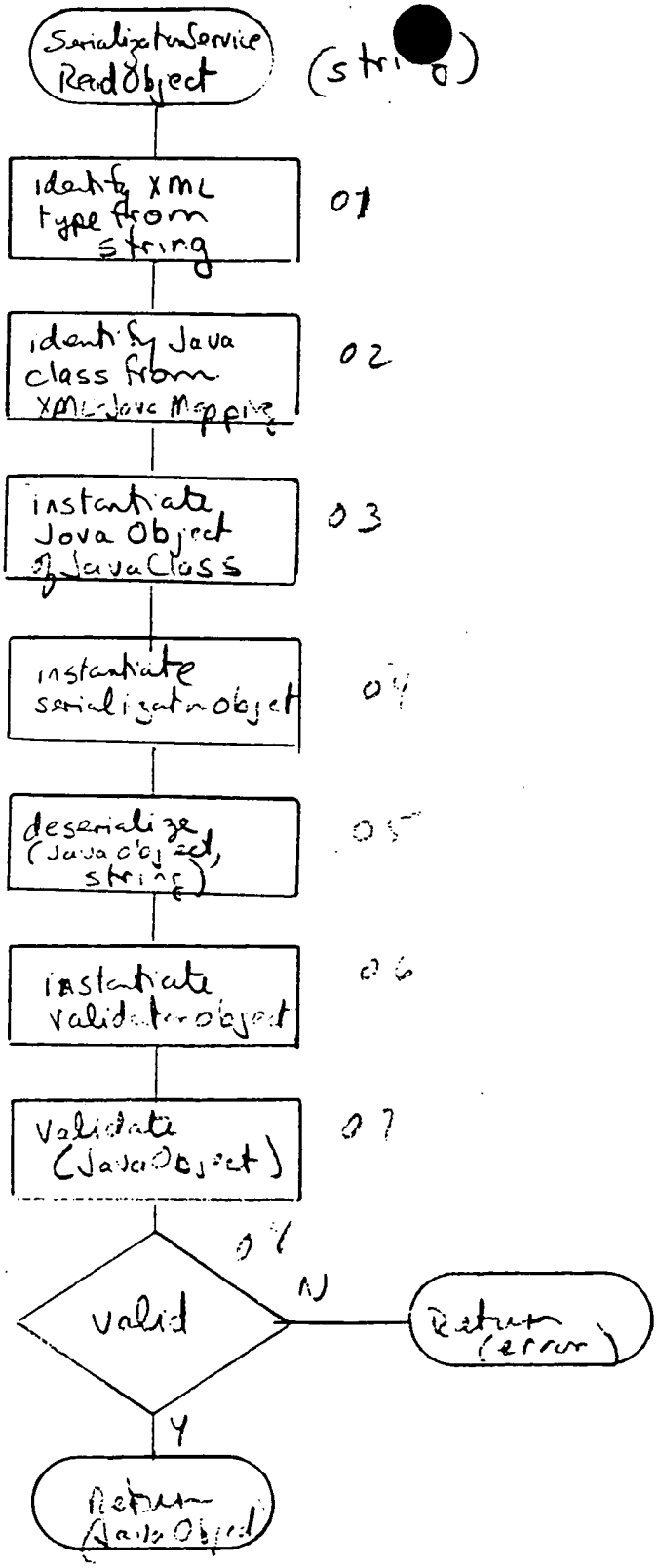


Fig. 36

Configuration Service

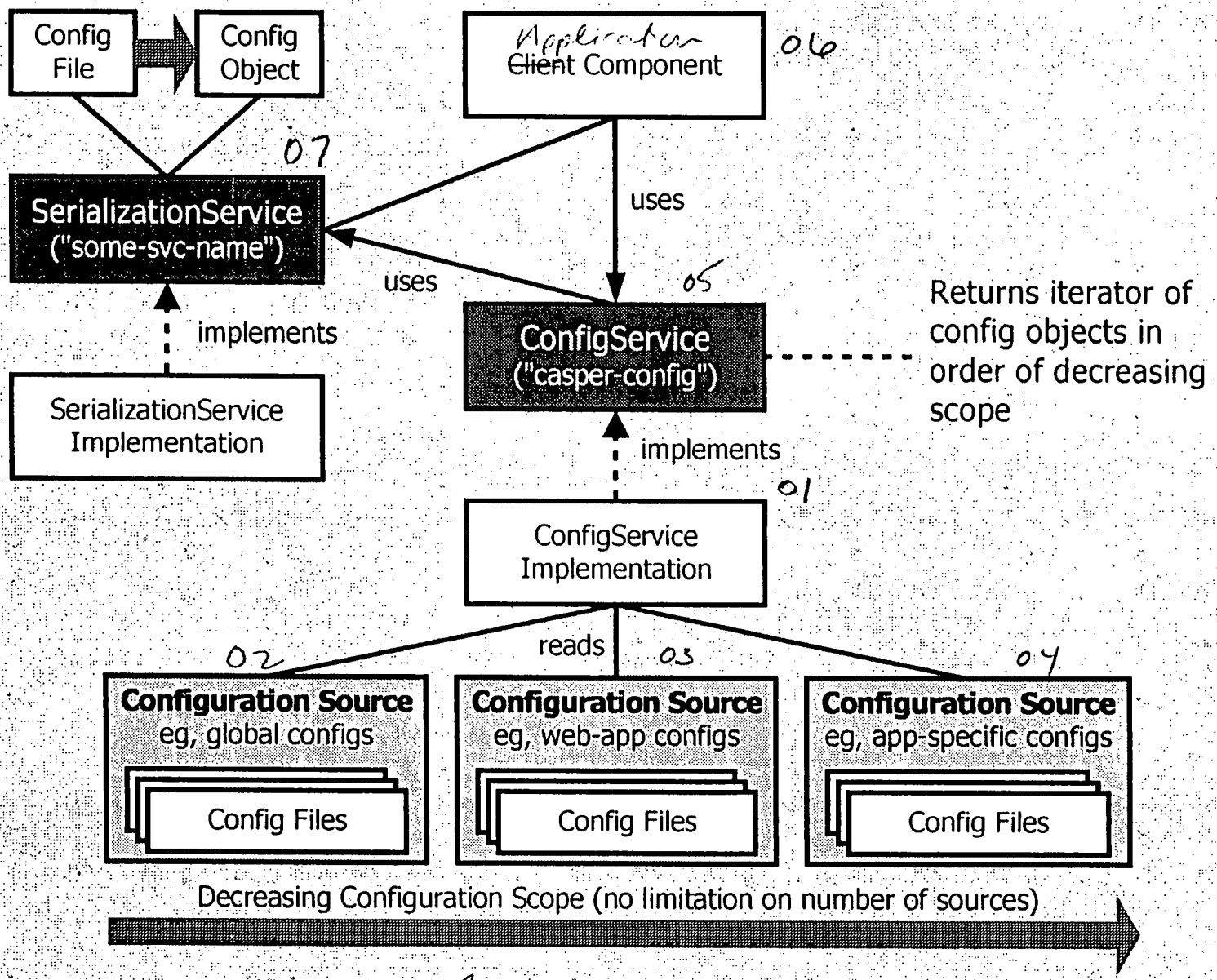


Fig. 37

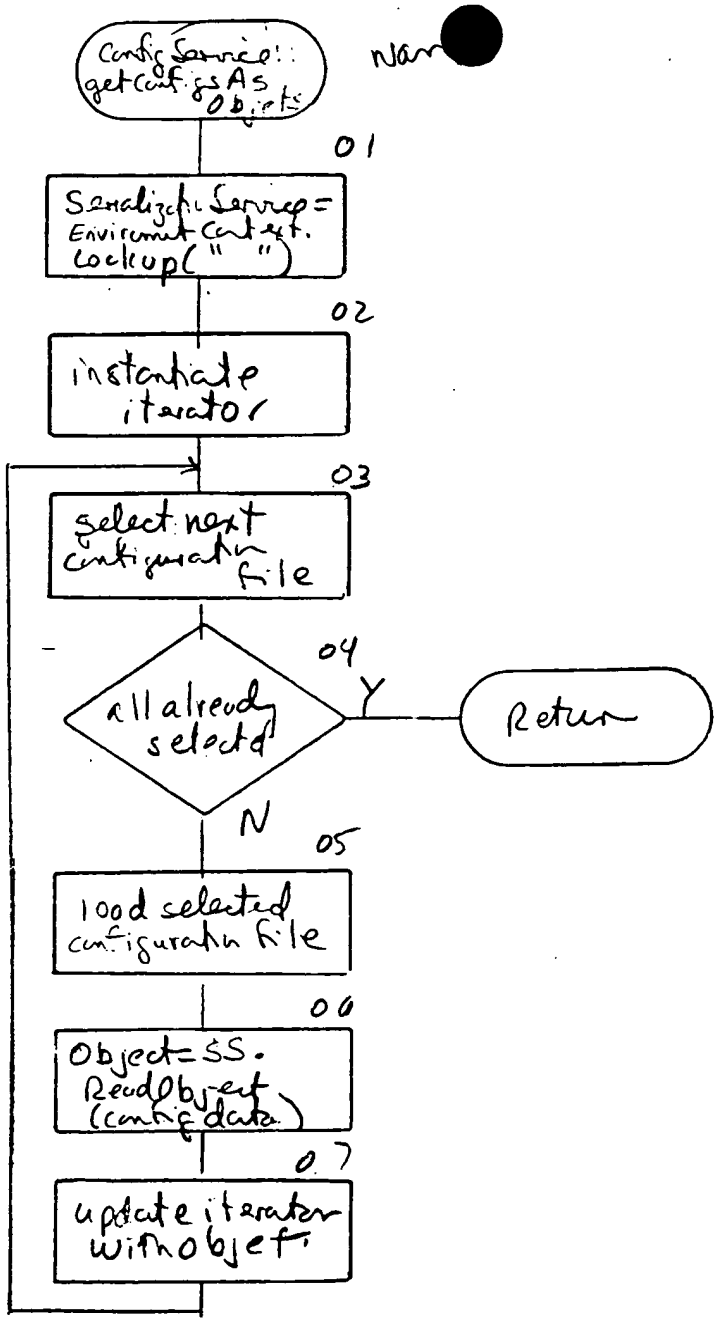


Fig. 38

09755503 - 010201

TO20TO"66555260

Fig. 39

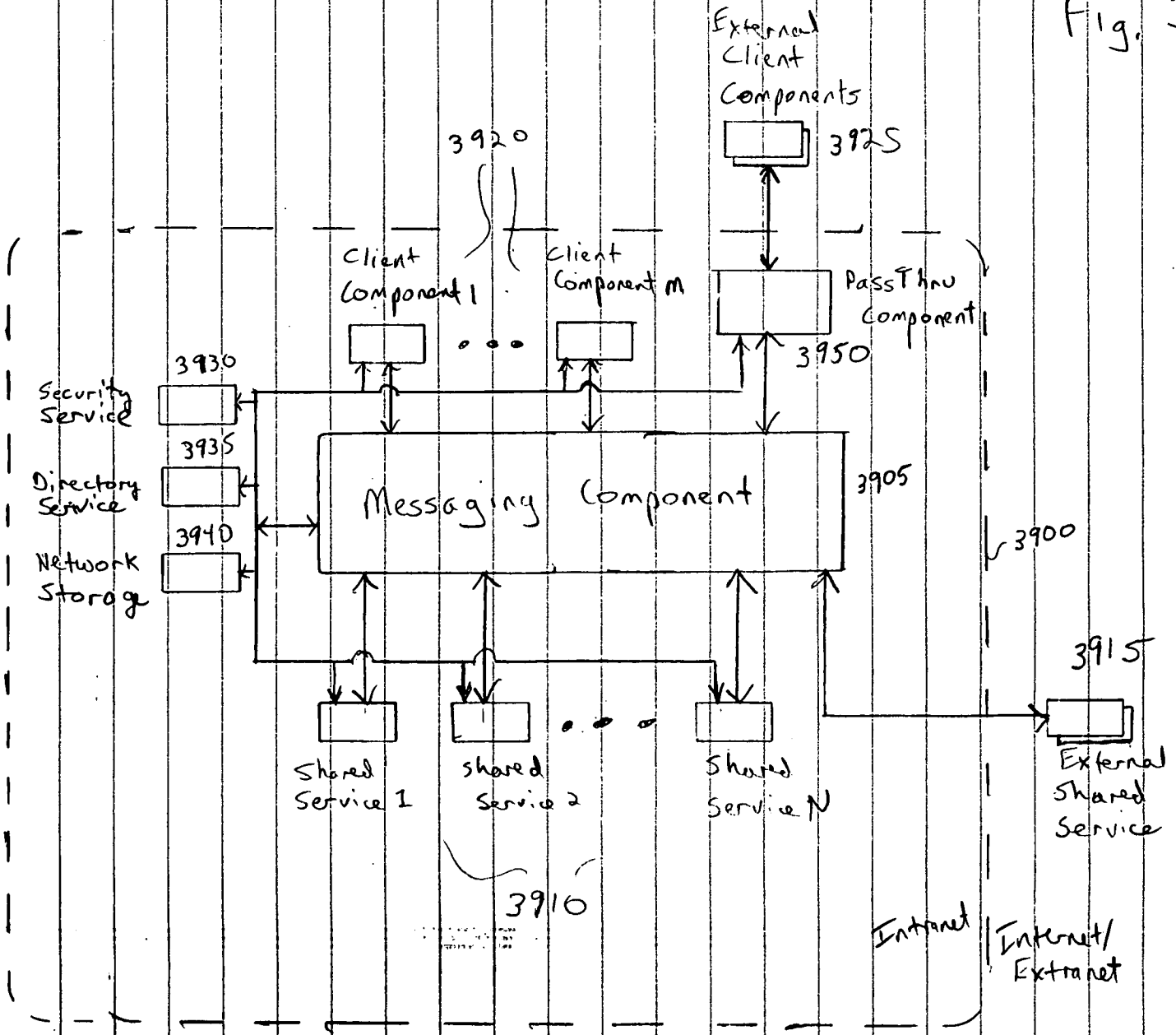


Fig. 40

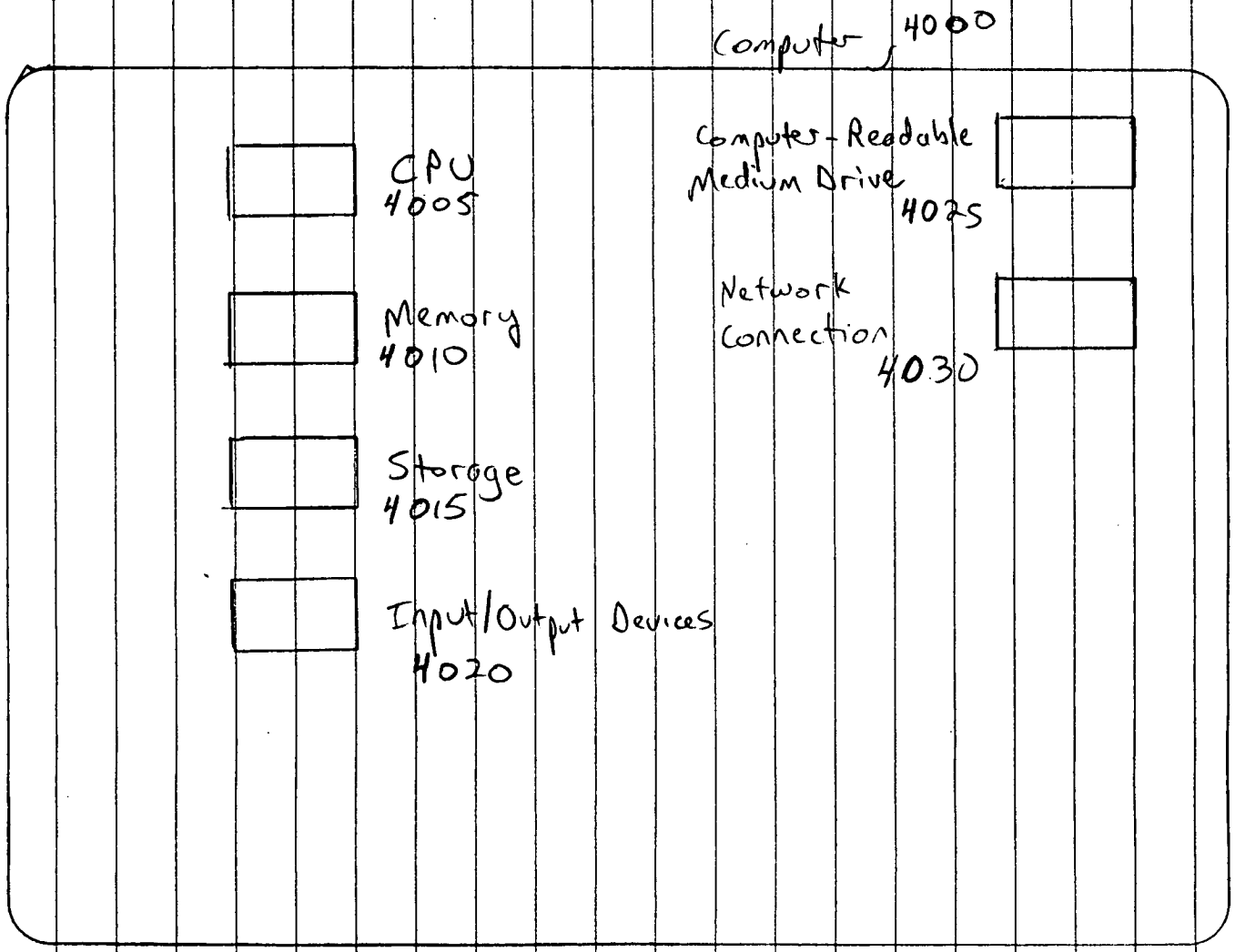
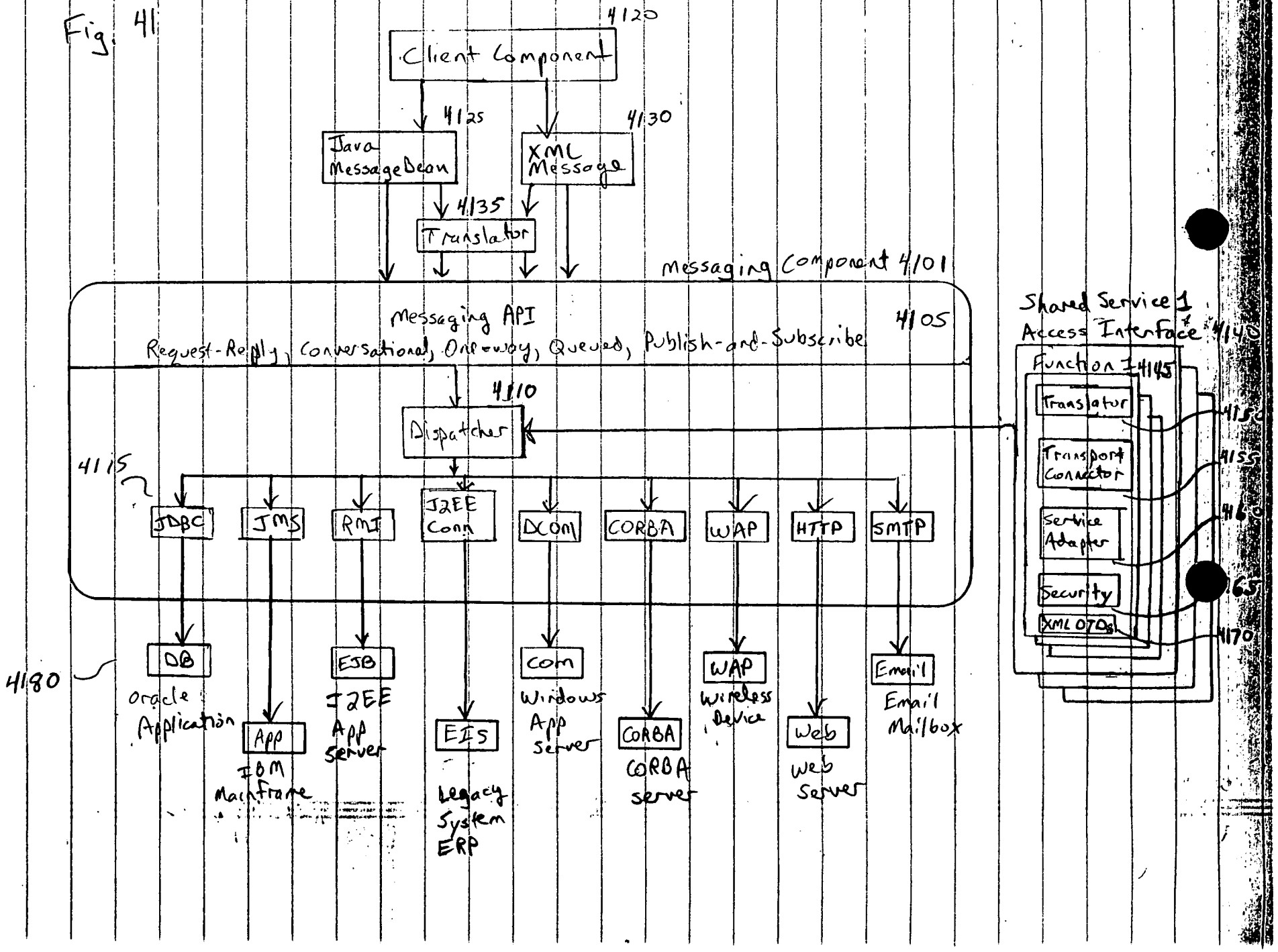

Computer 4000
CPU 4005
Memory 4010
Storage 4015
Input/Output Devices 4020
Computer-Readable Medium Drive 4025
Network Connection 4030

Fig. 41


4120
Client Component
4125
Java MessageBean
4130
XML Message
4135
Translator
Messaging Component 4101
Messaging API
Request-Reply, Conversational, One-way, Queued, Publish-and-Subscribe
4105
4110
Dispatcher
4115
JDBC
JMS
RMI
J2EE Conn
DCOM
CORBA
WAP
HTTP
SMTP
4180
DB
Oracle Application
App
IBM Mainframe
EJB
J2EE App Server
EIS
Legacy System ERP
COM
Windows App Server
CORBA
CORBA server
WAP
Wireless Device
Web
Web server
Email
Email Mailbox
Shared Service 1 Access Interface
4140
Function 1
4145
Translator
Transport Connector
Service Adapter
Security
XML OTDs
4150
4155
4160
4165
4170

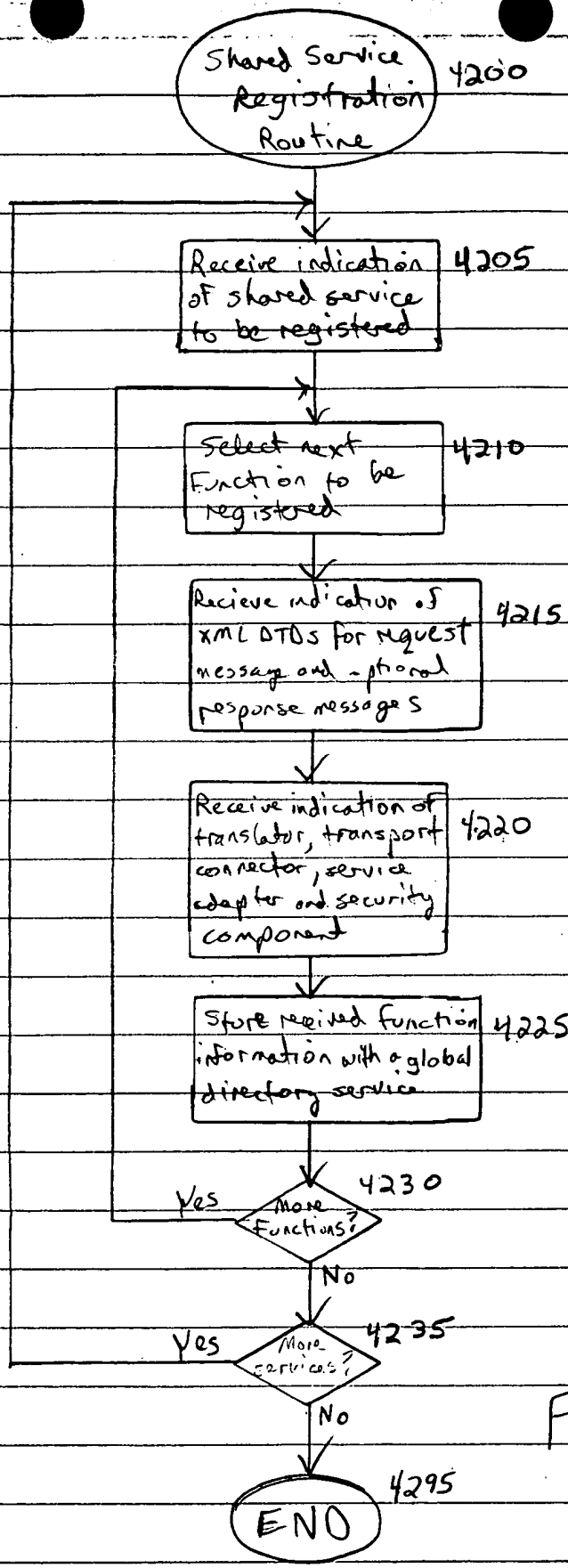

Shared Service Registration Routine
4200
Receive indication of shared service to be registered
4205
Select next Function to be registered
4210
Recieve indication of xML DTDs for request message and - proxal response messages
4215
Receive indication of translator, transport connector, service adapter and security component
4220
Store received function information with a global directory service
4225
More Functions?
4230
Yes
No
More services?
4235
Yes
No
END
4295

Fig. 42

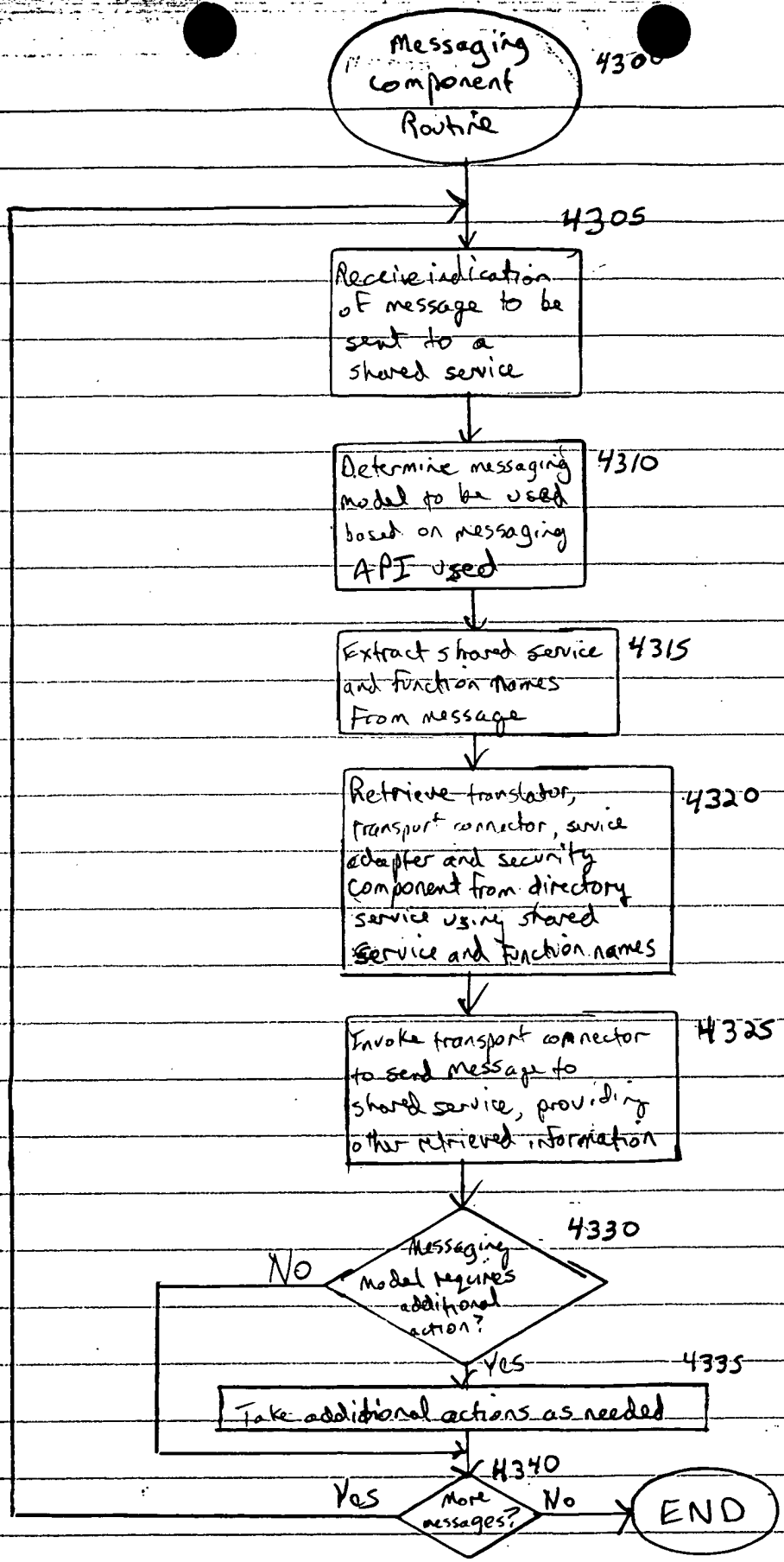


Fig. 43

DOCUMENT - CONFIDENTIAL

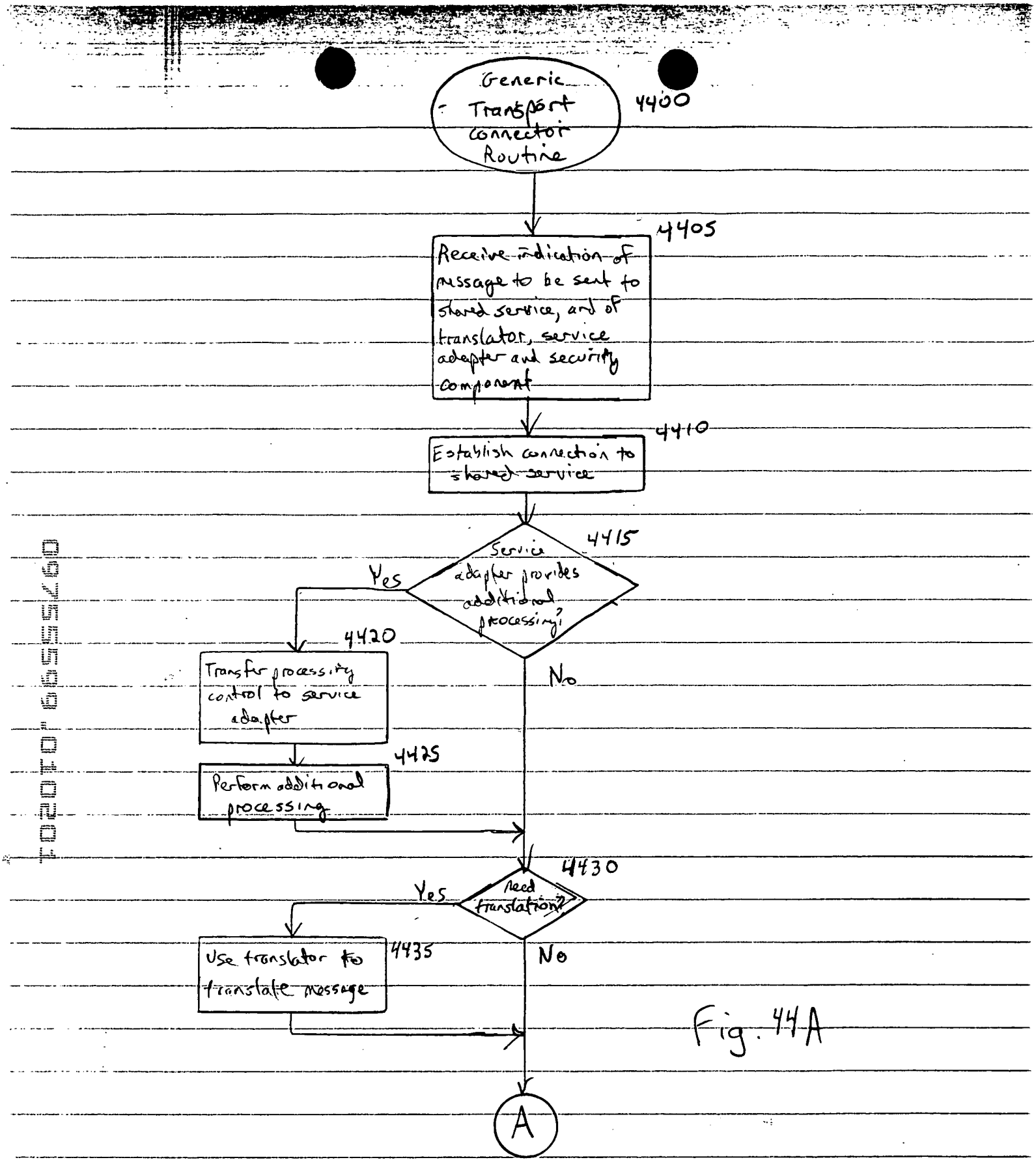

Generic Transport Connector Routine
4400
4405
Receive indication of message to be sent to shared service, and of translator, service adapter and security component
4410
Establish connection to shared service
4415
Service adapter provides additional processing?
Yes
No
4420
Transfer processing control to service adapter
4425
Perform additional processing
4430
Need translation?
Yes
No
4435
Use translator to translate message
A

Fig. 44A

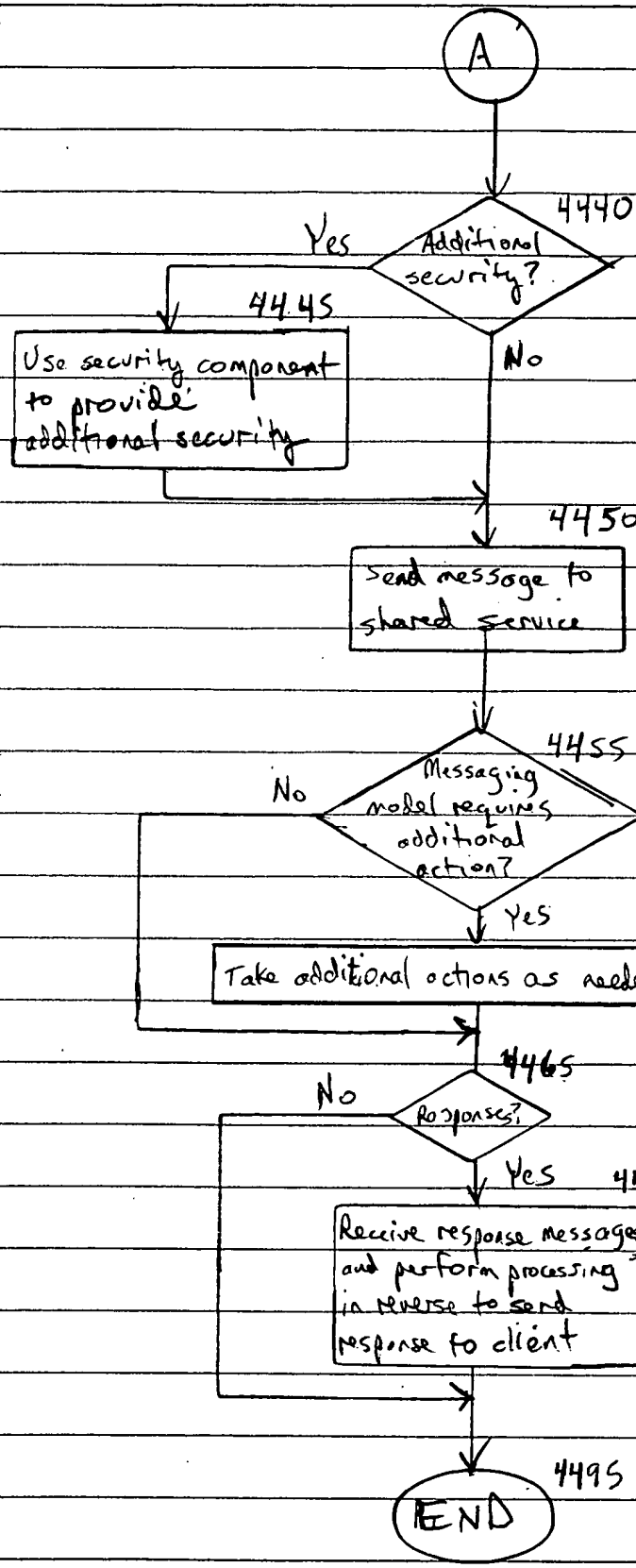

A
4440
Additional security?
Yes
No
4445
Use security component to provide additional security
4450
Send message to shared service
4455
Messaging model requires additional action?
No
Yes
4460
Take additional actions as needed
4465
Response?
No
Yes
4470
Receive response message, and perform processing in reverse to send response to client
4495
END

Fig. 44B

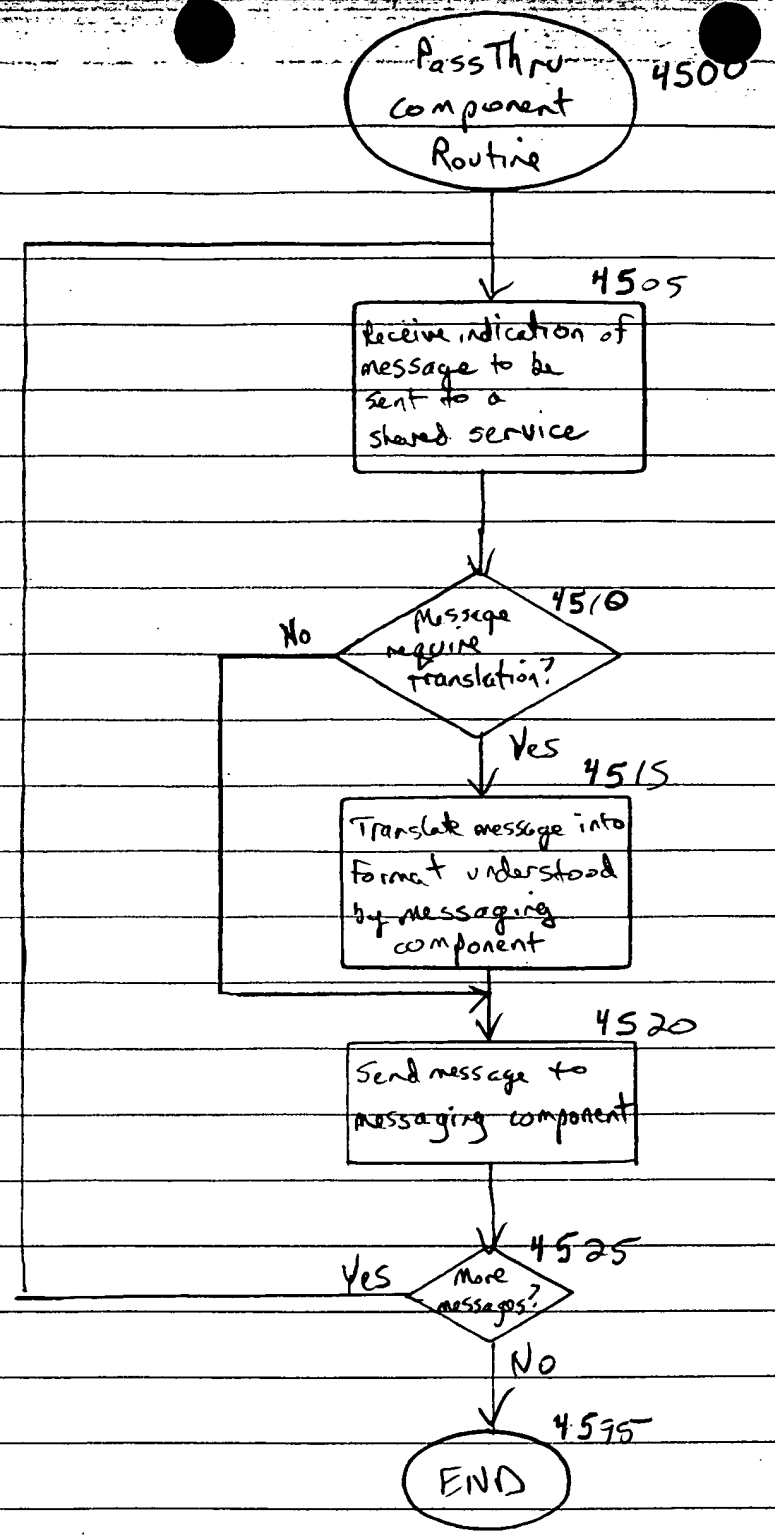

PassThru component Routine
4500
4505
Receive indication of message to be sent to a shared service
4510
Message requires translation?
No
Yes
4515
Translate message into format understood by messaging component
4520
Send message to messaging component
4525
More messages?
Yes
No
4595
END

Fig. 45

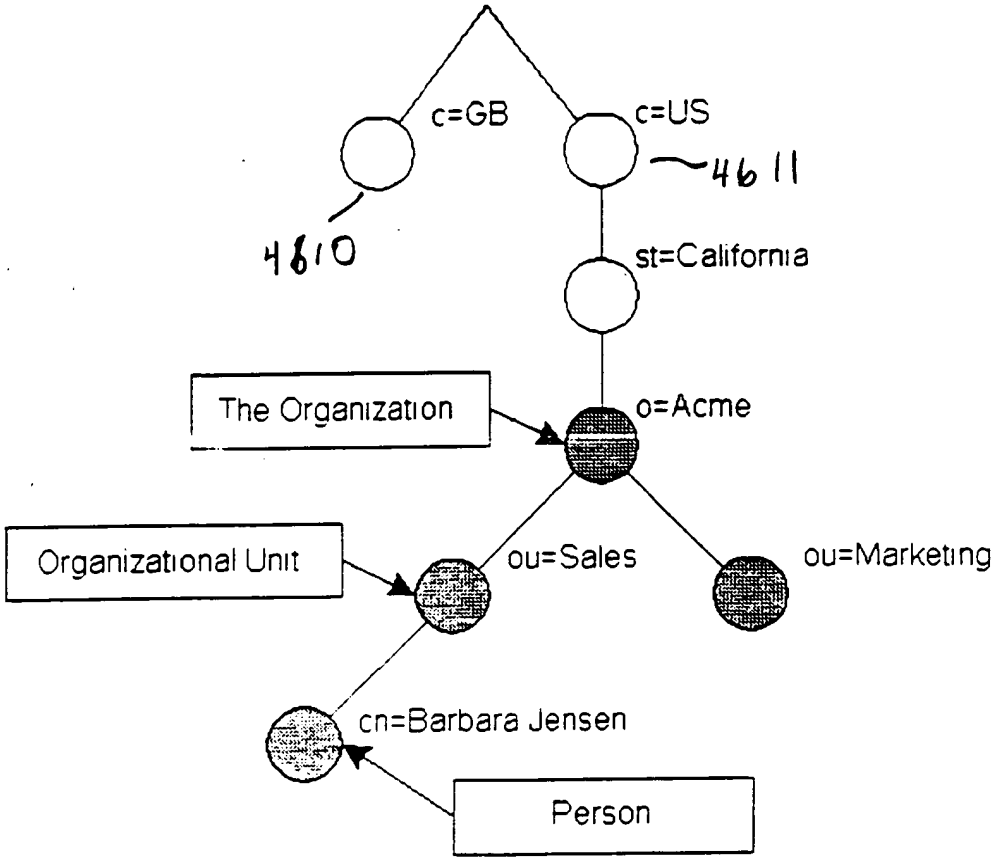

c=GB
c=US
4611
4610
st=California
The Organization
o=Acme
Organizational Unit
ou=Sales
ou=Marketing
cn=Barbara Jensen
Person

Fig. 46A

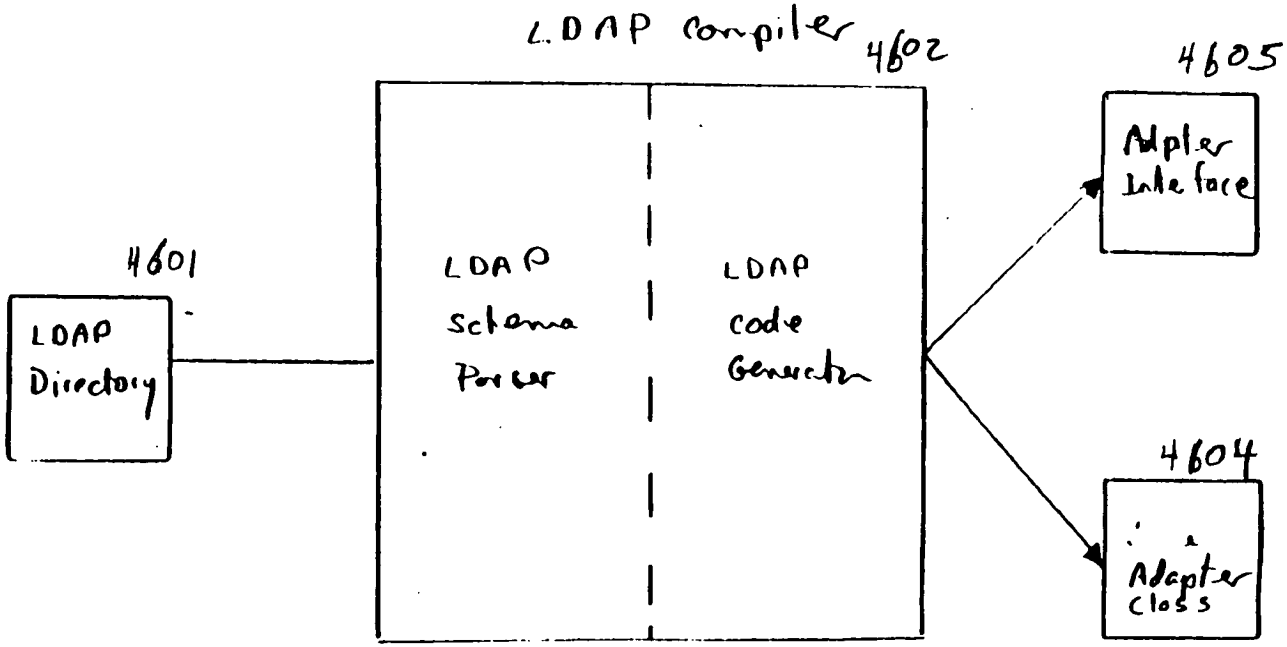

LDAP compiler
4602
4605
Adpter
Interface
4601
LDAP
Directory
LDAP
schema
Parser
LDAP
code
Generator
4604
Adapter
Class

Fig. 46B

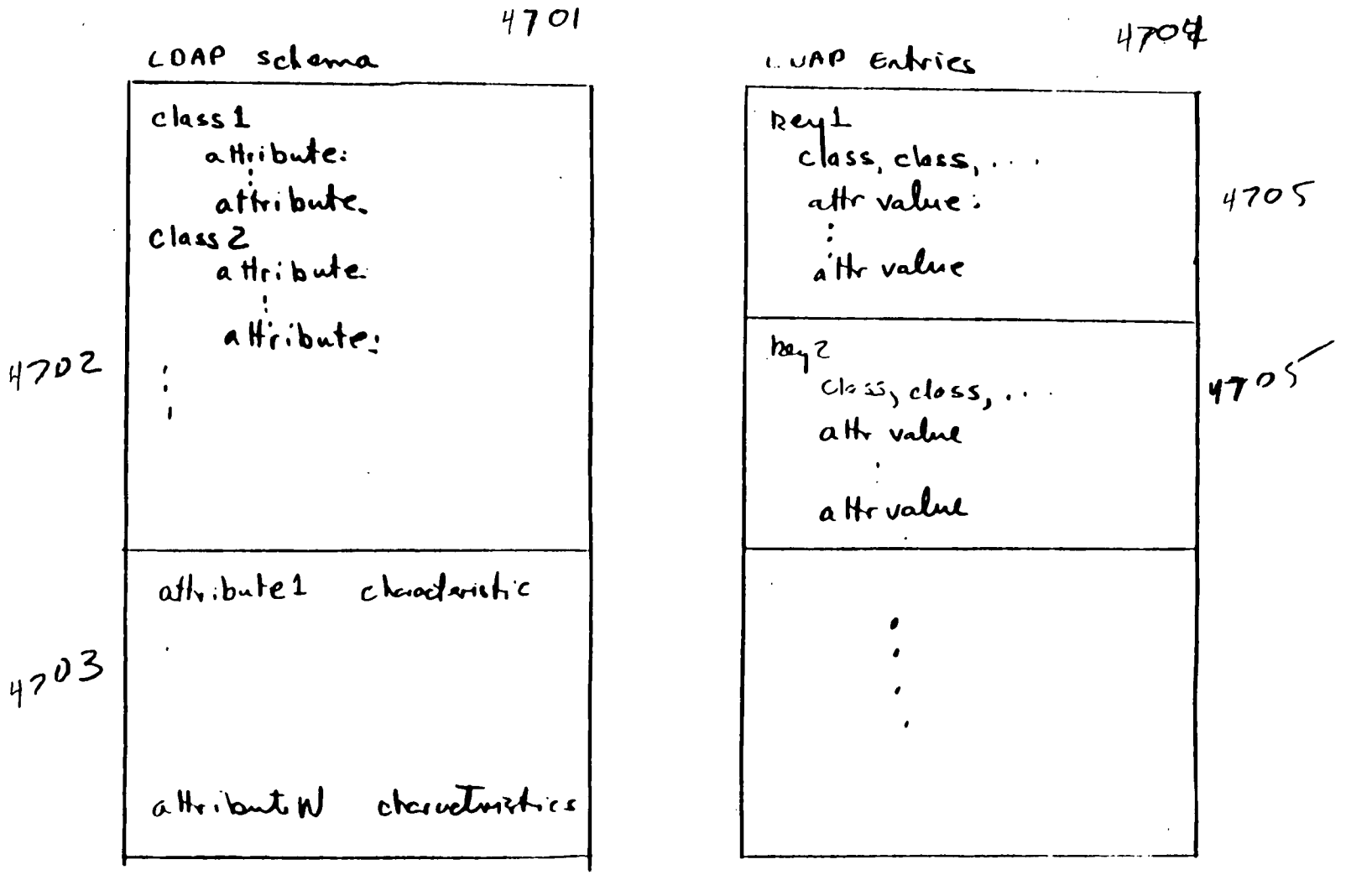

4701
LDAP schema
class 1
attribute:
attribute
class 2
attribute
attribute:
4702
attribute1 characteristic
4703
attributeN characteristics
4704
LDAP Entries
key1
class, class, ...
attr value:
attr value
4705
key2
class, class, ...
attr value
attr value
4705

Fig 47

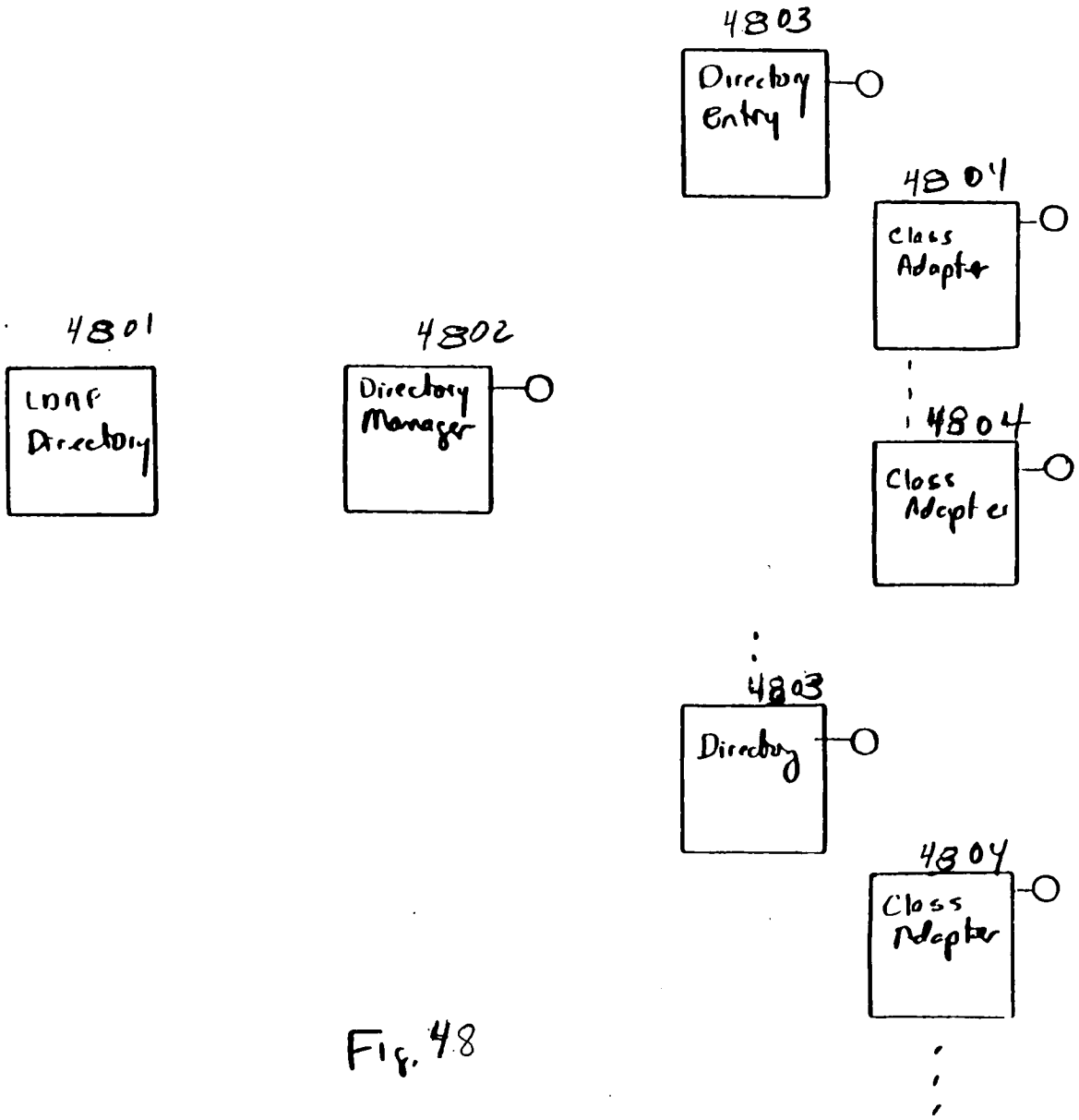

4803
Directory Entry
4801
LDAP Directory
4802
Directory Manager
4804
Class Adapter
4804
Class Adapter
4803
Directory
4804
Class Adapter

Fig. 48

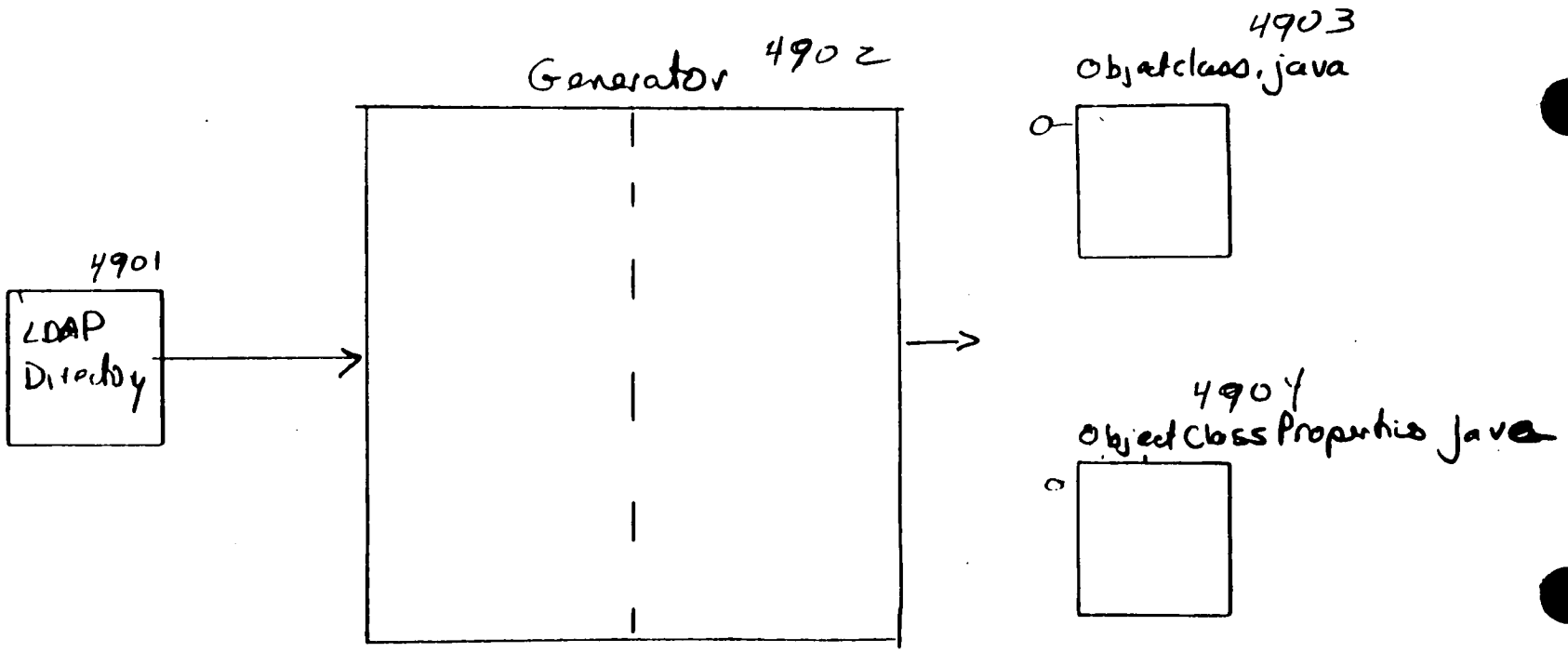

4903
Generator 4902
Objectclass.java
4901
LDAP
Directory
4904
ObjectClassProperties.java

Fig. 49

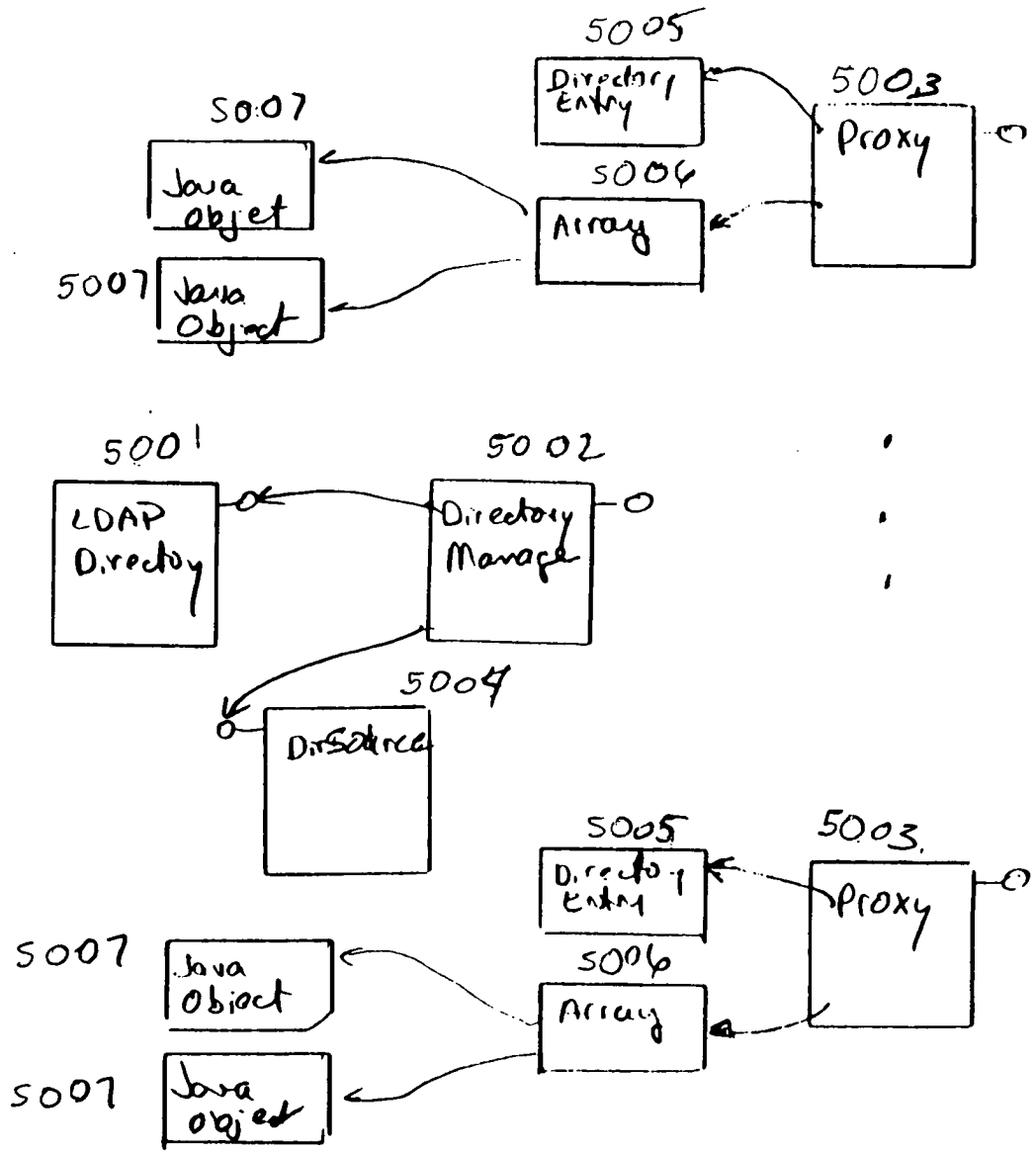

5005
Directory Entry
5003
Proxy
5007
Java object
5006
Array
5007
Java Object
5001
LDAP Directory
5002
Directory Manager
5004
DirSource
5005
Directory Entry
5003
Proxy
5007
Java Object
5006
Array
5007
Java object

Fig. 50

09755503.010201

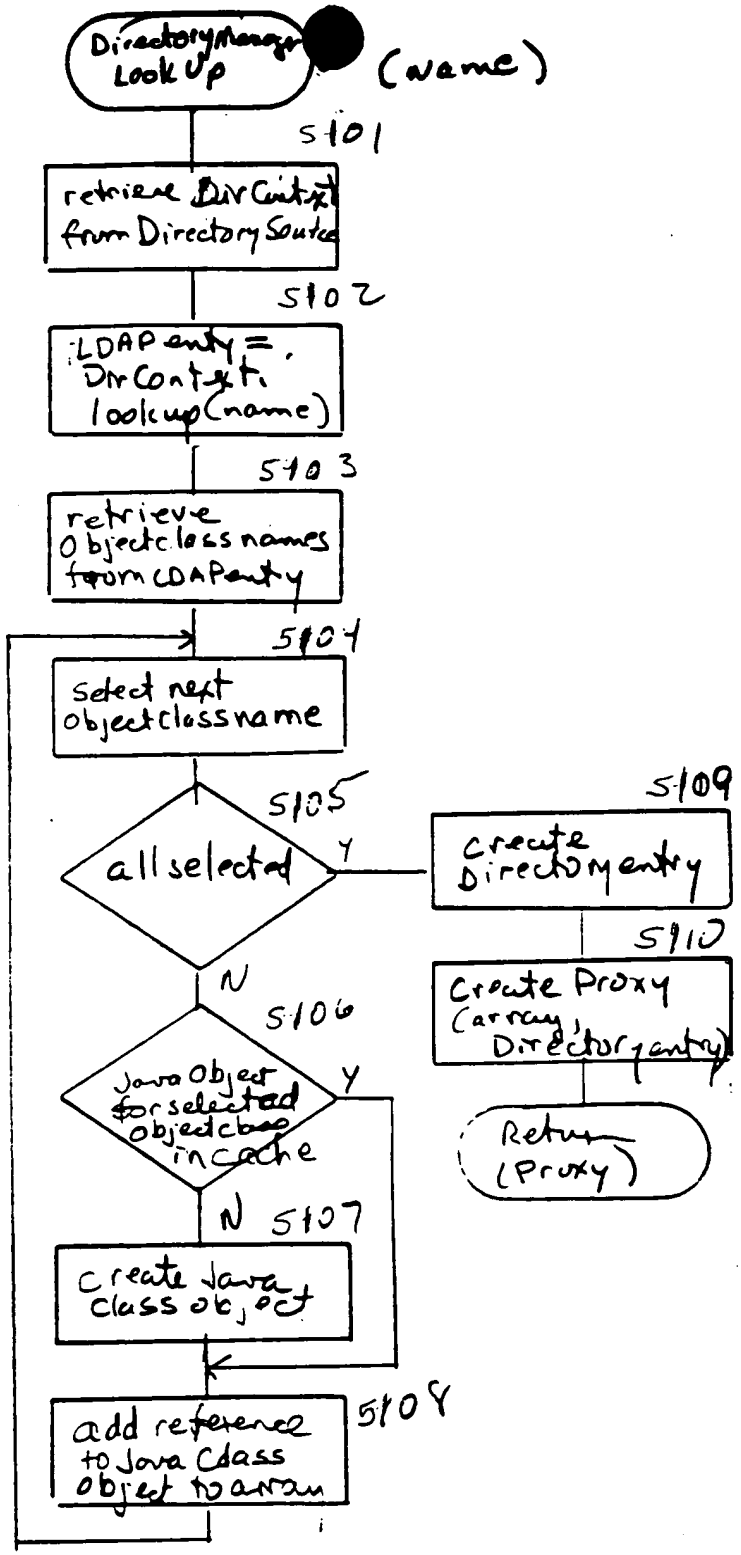


Fig. 51

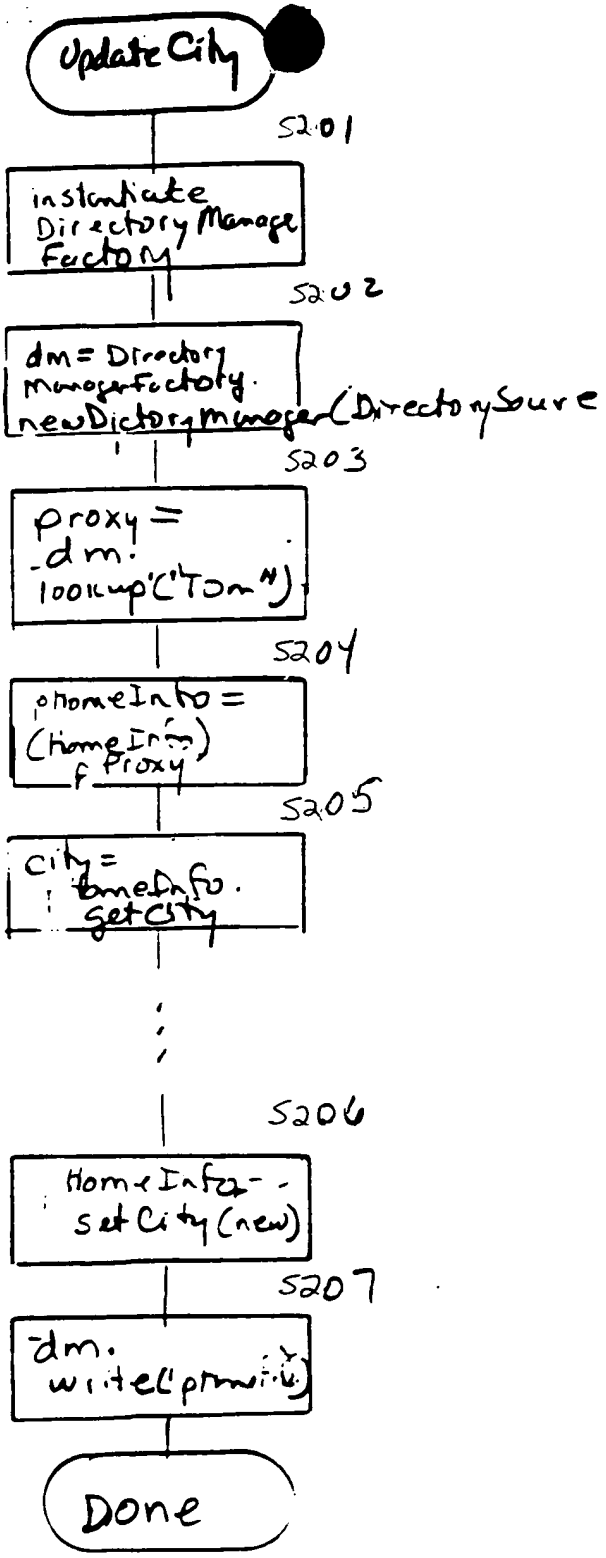

Update City
S201
instantiate Directory Manager Factory
S202
dm = Directory ManagerFactory. newDictoryManager(DirectorySource
S203
proxy = dm. lookup("Tom")
S204
pHomeInfo = (HomeInfo) f Proxy
S205
City = tmeInfo. getCity
S206
HomeInfo- - setCity(new)
S207
dm. writeChanges()
Done

Fig. 52

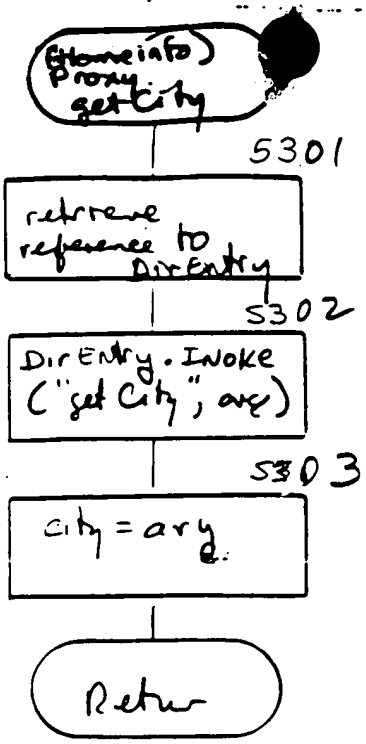


Fig. 53

Patent: 6,557,028